

# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—15TH YEAR.

SYDNEY, SATURDAY, JANUARY 28, 1928.

No. 4.

Authors of articles submitted for publication are requested to read the following instructions and to comply with them.

All articles must be typed with double or treble spacing. Carbon copies should not be sent. Abbreviations should be avoided, especially those of a technical character at times employed in ward notes. Words and sentences should not be underlined or typed in capitals. The selection of the correct type is undertaken by the Editors. When illustrations are required, good photographic prints on glossy gaslight papers should be submitted. Each print should be enclosed in a sheet of paper. On this sheet of paper the number of the figure and

the legend to appear below the print should be typed or legibly written. On no account should any mark be made on the back of the photographic print. If no good print is available, negatives may be submitted. Line drawings, graphs, charts and the like should be drawn on thick, white paper in India ink by a person accustomed to draw for reproduction. The drawings should be large and boldly executed and all figures, lettering and symbols should be of sufficient strength and size to remain clear after reduction. Skiagrams can be reproduced satisfactorily only if good prints or negatives are available. The reproduction of all illustrations but especially of skiagrams entails the sacrifice of

time and energy and is expensive. Authors are expected to take a corresponding amount of trouble on the preparation of their illustrations, whether skiagrams, photographs, wash drawings or line drawings. The references to articles and books quoted must be accurate and should be compiled according to the following scheme. The order should correspond to the order of appearance in the article. The initials and surnames of the authors, the full title of the article or book, the full (unabbreviated) title of the journal in which the article appears, the date of the issue (day, month and year) and the number of the first page should be given in this sequence.

## Table of Contents

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—		PAGE.	BRITISH MEDICAL ASSOCIATION NEWS—		PAGE.
"Some Remarks on Situs Inversus Viscerum," by H. H. WOOLLARD, M.D., B.S. . . . .		100	Scientific . . . . .		124
"Some Experiences of Urologic Practice," by REGINALD BRIDGE, M.B., Ch.M., F.R.C.S. . . . .		103	Nominations and Elections . . . . .		125
"The Louse-borne Type of Relapsing Fever as Prevalent in the Anglo-Egyptian Sudan, 1926 and 1927," by C. E. G. BEVERIDGE, M.A., B.Sc., M.R.C.S., L.R.C.P. . . . .		110	Friendly Society Lodge Practice in Queensland . . . . .		125
"Protein Sensitiveness," by D. L. BARLOW, M.C., M.D., B.S. . . . .		112	<b>MEDICAL SOCIETIES—</b>		
			The Medical Sciences Club of South Australia . . . . .		125
			The Alfred Hospital Clinical Society . . . . .		126
<b>REPORTS OF CASES—</b>			<b>PUBLIC HEALTH—</b>		
"The Prognosis in Fracture of the Spine of the Tibia," by C. E. CORLETTE, M.D., Ch.M. . . . .		114	Health Work in England and Wales . . . . .		127
"Meckel's Diverticulum," by G. WIEN SMITH, M.B., B.S. . . . .		114	Cancer Research . . . . .		129
"Intractable Bleeding from a Leech Bite," by SYDNEY J. WOOLNOUGH, M.B., Ch.M. . . . .		115	<b>CORRESPONDENCE—</b>		
			The College of Surgeons of Australasia . . . . .		130
<b>REVIEWS—</b>			Injection Treatment of Varicose Veins . . . . .		130
Diseases of Thoracic Organs . . . . .		115	The Treatment of Pernicious Anæmia . . . . .		130
The Surgery of the Liver, Pancreas and Gall-Bladder . . . . .		116	Fees for Attendance on Injured Workers . . . . .		130
Public Health—India . . . . .		116	The Insignia of Æsculapius . . . . .		131
<b>LEADING ARTICLES—</b>			<b>OBITUARY—</b>		
A Retrospect . . . . .		117	Hewlett Breton . . . . .		131
<b>ABSTRACTS FROM CURRENT MEDICAL LITERATURE—</b>			<b>PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—</b>		
Radiology . . . . .		122	Tasmania . . . . .		131
Physical Therapy . . . . .		122	Queensland . . . . .		131
			New South Wales . . . . .		131
			<b>BOOKS RECEIVED . . . . .</b>		132
			<b>DIARY FOR THE MONTH . . . . .</b>		132
			<b>MEDICAL APPOINTMENTS . . . . .</b>		132
			<b>MEDICAL APPOINTMENTS VACANT, ETC. . . . .</b>		132
			<b>MEDICAL APPOINTMENTS: IMPORTANT NOTICE . . . . .</b>		132
			<b>EDITORIAL NOTICES . . . . .</b>		132

SOME REMARKS ON SITUS INVERSUS VISCERUM.<sup>1</sup>

By H. H. WOOLLARD, M.D., B.S. (Melbourne).  
Professor of Anatomy, University of Adelaide.

THE material which is the occasion of the following remarks came under my observation through the kindness of Professor Cleland, of the Pathological Department of the University of Adelaide. From the specimens he gave me it was clear that the viscera had undergone a reversal of their normal asymmetry. By *situs inversus viscerum* is meant that condition in which the thoracic and abdominal viscera are so transposed that their usual relations are reversed.

The new position taken up by the viscera is such that a mirror image of the original arrangement is formed. Not only are the larger viscera like the heart, liver and stomach transposed to the opposite side, but the smallest structures and most detailed relations are reversed. In the transverse fissure of the liver, for instance, the bile duct is in front and to the left instead of in front and to the right. The gall-bladder lies along the left margin of the quadrate lobe. And so the whole arrangement might be described in terms of a mirror image of the usual position.

## Symmetry and Asymmetry of the Body.

All types of symmetry are present in the human body. The serial repetition of structures in the segmentation or metamerism of the body forms a cranio-caudal symmetry. In the vertebrate body the symmetrical arrangement of the organs and limbs about the median axis of the body is known as bilateral symmetry or antimerism. Other forms are radial symmetry which occurs in the arrangement of the digits. It is interesting to notice how very widespread a pentamerous or pentagonal arrangement of parts is in the animal and vegetable kingdoms. Spiral symmetry also occurs in which the arrangement is not in the form of a serial repetition of parts, but consists in the repetition of geometrical form. Thus the abdominal and thoracic viscera exhibit a spiral symmetry. Departures from a true symmetry are also characteristic of the body and indeed are part of the same fundamental problem of symmetry. In all structures on the two sides of the median axis there are slight differences of form and size. More remarkable are such departures from a true symmetry as the presence of complete or partial decussations of some nerve tracts and of nerves themselves and the absence of decussation in others. Examples of such asymmetries are the ocular nerves, the localization of speech on the left side of the brain and the human phenomena of right handedness and left handedness. *Situs inversus viscerum* is, however, a condition which is not merely a departure from symmetry, but is really the reversal of the normal arrangement of the viscera of the body. The condition, by no means common, is, however, of sufficient frequency to attract the notice of students of medicine at some time or other. It occurs not

only in man, but has been observed in most vertebrates and is particularly common among the invertebrates. Certain snails show the phenomenon with great frequency and members of the same species often exhibit a dextral or a sinistral rotation of their form.

## Relation to Cell Growth and Differentiation.

It is obvious that these meristic phenomena represent a fundamental law in the structure of the body and, of course, have always excited speculation. Merism is tied up in some way with the differentiation of the body. It has become customary to speak of cell growth and differentiation as though they were one and the same process. It is more likely that they are independent processes. Growth occurs in the young cell or in the cell that at any rate returns temporarily to an embryonic state, while differentiation is a process that occurs during the intervals between cell division. It is to differentiation that the meristic and segmental laws appear to apply and it would seem that differentiation can occur only in obedience to these conditions. A high degree of differentiation soon becomes incompatible with cell division, as in the nervous system for instance.

## Anatomical Investigations.

The first point the anatomist makes when studying these cases of reversed symmetry is that they appear late in ontogeny and succeed a condition when the viscera are disposed regularly about the median plane of the body. The heart begins as a median tubular structure from whose cranial end the aortic arches arise symmetrically arranged on each side. The liver passes through a stage in which right and left portions are again symmetrically disposed to the median axis. It is common knowledge that the stomach begins as a straight tube and, moreover, the pancreas begins as a series of right and left dorsal and ventral buds symmetrically disposed; the same applies to the intestinal loop and the hind gut. Since the asymmetrical state of the viscera follows on a stage when they are symmetrically arranged, the factors which bring about the reversal of the symmetry have been supposed to operate between the stage of symmetry and asymmetry. For in taking up their adult position the viscera undergo a spiral torsion which normally in all the viscera is a dextral one. This applies to the heart as well as to the alimentary canal and is even repeated in the arrangement of the musculature of the gut, for this has been shown to possess also a dextral torsion. Since the viscera and the great blood vessels share in this spiral torsion which causes them to assume something of the form of the logarithmic spiral, anatomists have sought the cause in some organ that takes part in the torsion. Most often the vascular changes have been isolated and raised to a primary rank in the causation. Such explanations are unsatisfactory, since they isolate one element in the whole process, call it primary and derive the others from it. Some of them, dissatisfied with this illogical process, have taken refuge in metaphysics. Nature abhors asymmetry. Symmetry is the permanent form of the body; asymmetry is the

<sup>1</sup> Read at a meeting of the Medical Sciences Club of South Australia on October 7, 1927.

transient form. It has been suggested that in a not unreasonable space of time the branches of the aorta will become symmetrical in man.

Mathematical biologists have given attention particularly to the spiral symmetries and since many of these are either of the logarithmic or the Archimedean type and since in some cases these two forms are followed with the greatest accuracy, they have been disposed to regard these forms of growth as something fundamental which can only be explained in terms of the orientation of the units which compose the body.

#### Experimental Investigation.

Of these investigations I would first briefly refer to those of Harrison. Harrison carried out an investigation of the factors involved in the symmetry of the limbs in the amphibia. Before Harrison, Bateson arrived at certain general conclusions regarding limb symmetry from a study of supernumerary appendages in arthropods. This material was found in the ordinary course of the examination of specimens and Bateson formulated certain general rules about them. One was that supernumerary appendages tended to occur in triplicate. This has not been substantiated by experiment and is recorded only because it has formed the basis of certain speculations on symmetry. The other important point he perceived was that a supernumerary appendage was always the mirror image of the adjacent appendage. Supernumerary appendages occurring in an ordinary linear series as mere repetitions were unknown. Harrison's experiments on limb transplantation enabled him to confirm this statement, for he found that in limb transplantation a heteropleural transplant, that is one from the other side, grew out as a mirror image of the limb on the side to which it was transplanted. If the transplant were reversed, *id est* turned upside down, however, it grew out as a limb appropriate to the side to which it was transplanted. Moreover, in these disharmonic transplants, that is those which gave rise to a mirror limb, reduplication was prone to occur. There might be one or several reduplications, but always each reduplication was the mirror image of the limb which it immediately succeeded. Thus

Bateson's rule was confirmed and there was no particular reason for making triplicity an integral part of limb symmetry.

Further, Harrison established the fact that the tissue rudiment which gave rise to the limb, the limb bud, was a harmonic equipotential system. That is to say, any part of this rudiment was capable of producing a whole normal limb and this could occur even if the cells composing the limb bud were sucked up in a syringe and then transplanted. He was thus driven to the conclusion that the factors of symmetry did not lie in the order in which the cells were placed, but must rest upon the orientation of the material composing the cell. He used the stoichiometric model of the carbon atom of the biochemist and drew analogies with dextro-rotatory and laevo-rotatory compounds. Harrison points out that these are only analogies, but it is

possible that it may turn out that they are something more than this. The reaction of the body to dextro-rotatory adrenalin and the absence of reaction to the laevo-rotatory form, the metabolic inactivity of laevo-rotatory sugars, the behaviour of ferments at once suggest themselves.

However, confirmation of Harrison's view that the factors of symmetry lay in the intimate structure of the material of the cells came from another source. Conklin concerned himself with an investigation of dextral and sinistral snails and was able to show that the direction of the

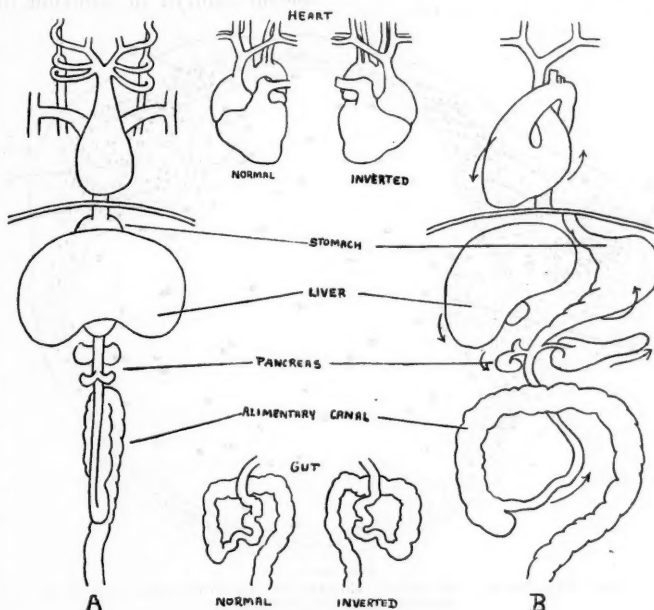


FIGURE I.  
A = Diagram of Primitive Symmetrical Position. B = the Adult Arrangement Resulting from the Usual Dextral Rotation. (After F. T. Lewis.)

spiral was revealed in the first cell cleavage. The plane of the first cleavage took a spiral form and the adult became a dextral or a sinistral snail according to whether the direction of the first cleavage rotated to the right or the left. Since the asymmetry appeared in the first cleavage he concluded quite properly that the factors determining this must lie in the orientation of the cell material in the undivided egg.

Since the cause lies right at the beginning of development, it was natural to suppose that the asymmetry might lie in the interaction of two adjacent centres of growth and Harrison was disposed to see in this an explanation of the mirroring of adjacent limbs. Two adjacent growth centres acting on each other in the limb bud, might involve the explanation of limb-mirroring. This hypothesis



could, of course, be tested by an appeal to the structural changes in homologous twins. As a matter of fact homologous twins do not show *situs inversus viscerum*. The only observation that brings out mirroring in such is that of Wilder, that sometimes the friction lines of the index fingers form a mirror of each other. The armadillo is an animal which shows polyembryony in that the four members of its litter are derived from a single ovum. The symmetry is very complicated here since in addition to the symmetry of each member in itself, there is a tendency to form a symmetry between pairs as well as a symmetry of all four with each other. However, there is a certain mirroring of scales but no *situs inversus*. Experimental twins and parasitism of fetuses have also been examined, but again though *situs inversus* does occur frequently, it is by no means the rule. The cause must lie still deeper.

The factors of symmetry must lie embedded in the morphological characters of the egg. There is now considerable evidence that there is a localization of developmental factors in the egg. This knowledge we particularly owe to the work of Brachet and Spemann. Briefly, it amounts to this, that the sperm enters the egg in a plane which is the line of cleavage of the egg and also the plane of the bilateral symmetry. Whether each blastomere of the first division will form a complete

embryo or not depends on two things: (i) they must be separated; (ii) the plane of cleavage must coincide with the plane of symmetry; if oblique to it, one of the blastomeres forms an imperfect twin. In the egg of the developing frog there forms near one pole after fertilization an area relatively deficient in pigment known as the grey crescent. Observation has shown that the lips of the blastopore form in this region and the material that lies in the median plane in front of the grey crescent is destined to form the prechordal part of the head, that is the olfactory, optic and cerebral parts of the brain. In the cranial lip of the blastopore the chordal parts of the body lie, that is the portion of the body roughly extending from the third nerve to the origin of the vagus. In the lateral portions of the grey crescent lies the material which will form the trunk and the tail.

Spemann, using another amphibian embryo, showed that this material did not self-differentiate,

but underwent a process of dependent differentiation which was governed by adjacent tissue to which he gave the name of organizer. Such an organizer he found in Triton situated at the cranial margin of the blastopore. This tissue transformed the adjacent material into notochord, somites, neural tube and so on. Material destined to form the ventral parts of the body, when transplanted to the cranial lip of the blastopore, was changed into neural tube *et cetera*. More amazing still, if the cranial lip of the blastopore was transplanted elsewhere in the egg immediately in its vicinity, axial structures were formed and this occurred even if the cranial lip was transplanted into another embryo, even of a widely different species. In this second embryo in addition to its own axial structures there formed

in the vicinity of the transplant a second embryo with neural tubes, somites, notochord *et cetera*. Finally, he showed that this organizer exerted its influence only if it were in actual contact with the surrounding tissues. If incisions were made around it, it could neither transform the material of the embryo to which it belonged, or, if transplanted, the tissues of the host into these axial structures. Brachet has shown that the grey crescent in the frog behaves as an

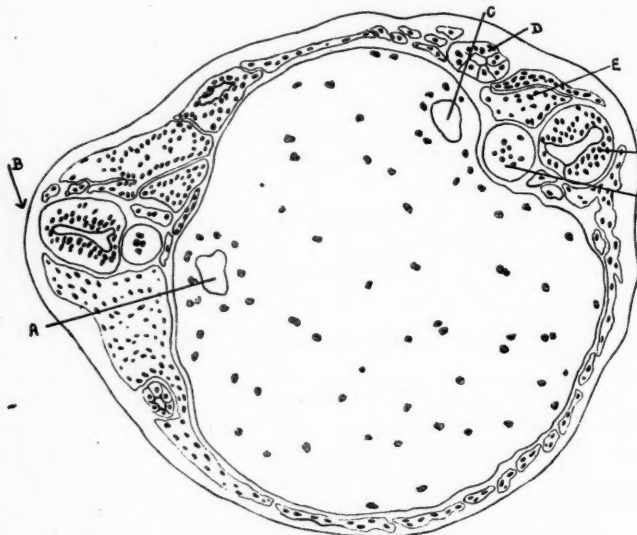


FIGURE 11.  
The Induction of a Secondary Embryo by the Transplantation of an Organizer (after Spemann).

organizer in the same way.

Thus we arrive at the conclusion that the developmental factors are definitely localized in the embryo, that their differentiation depends on certain other tissues called organizers. These organizers can act only at a certain period in development. They have no effect on tissues which have already undergone a certain degree of determination or differentiation. Brachet has brought out a further fact of great significance. If portions of the grey crescent are killed by means of a heated needle, then although cell multiplication occurs, appropriate parts are not formed, that is we have cell multiplication without cell differentiation. If, however, the destruction is of less extent and leads only to a partial loss of material, then the appropriate organs are formed, are quite healthy, but remain of smaller size than the uninjured side. Thus it would appear that cell differentiation and the extent of growth depend on the organizer.



Bearing these facts in mind the work of Spemann and Falkenberg is of the greatest interest, for they were able experimentally to produce *situs inversus viscerum*. By applying constrictions obliquely to the plane of the first cleavage of the embryo, they were able to produce twinning. *Situs inversus viscerum* occurred in about half these twins and, except in one case, it was always the right twin that was affected.

Spemann in a critical analysis of these results concludes that the normal symmetry of the body depends on the intimate nature of the material composing the cells. As the result of the constrictions applied to the cell in his experiments, a new factor was introduced affecting the orientation of this cell material. This is further borne out by the fact that defects in the body structure occurred fairly often where the twins were in apposition. The factor introduced by the experiment Spemann suggests, operates in the same sense as the normal torsion present in the left half of the egg and in the opposite sense in the case of the right half.

These observations do not furnish a complete understanding of *situs inversus viscerum* and cannot be applied directly to man, since we have no knowledge that cases of *situs inversus viscerum* are the right survivors of a twin pregnancy, the left having disappeared. They are, however, interesting and suggestive.

#### Bibliography.

1. W. Bateson: "Materials for the Study of Variation," 1894.
2. A. Brachet: "The Localization of Developmental Factors," *Quarterly Review of Biology*, 1927, Volume II, page 204.
3. E. G. Conklin: "Die Ursache der umgekehrten Symmetrie," *Anatomische Anzeiger*, 1903, Band XXIII.
4. R. Harrison: "Symmetry in Transplanted Limbs," *Journal of Experimental Zoology*, 1921, Volume XXXII-XXXIII, page 1.
5. F. T. Lewis: "A Note on Symmetry as a Factor in the Evolution of Plants and Animals," *The American Naturalist*, 1923, Volume LVII, page 5.
6. H. Spemann and H. Falkenberg: "Ueber asymmetrische Entwicklung und Situs Inversus Viscerum bei Zwillingen und Doppelbildungen," *Archiv für Entwicklungsmechanik*, 1919, Band XLV, Seite 371.
7. H. Spemann and H. Mangold: "Ueber Induktion von Embryonalanlagen durch Implantation artfremder Organisator," *Archiv für mikroskopische Anatomie und Entwicklungsmechanik*, 1925, Band CVI.
8. D'Arcy Thompson: "Growth and Form," 1917.

#### SOME EXPERIENCES OF UROLOGIC PRACTICE.

By REGINALD BRIDGE, M.B., Ch.M. (Sydney).  
F.R.C.S. (England).

Honorary Urologic Surgeon to the Balmain and District Hospital; Honorary Assistant Surgeon to the Sydney Hospital.

THE worker in any specialized branch of medicine accumulates over a period of years a mass of experience and knowledge that is denied to those who practise general medicine. Such a privilege carries the obligation of imparting this knowledge to

others, for by mutually sharing our experiences we enhance our worth as physicians.

The practice of urology is particularly applicable to these statements. On the one hand the work is detailed, complex and technical; on the other hand the general practitioner is called upon to treat patients complaining of symptoms of every variety of urologic disease.

It is my hope in this paper to elucidate some of the many problems that these patients present.

One outstanding fact in diseases of the urinary organs is the predominance of symptoms. It is on account of these symptoms, distressing and insistent, that our patients consult us. The striking thing is that often there is a surprising lack of associated physical signs.

There is one fundamental principle of urologic practice that cannot be emphasized too forcibly. The same symptoms can be due to entirely different diseases. The converse of this statement is also true, namely that the same disease can have entirely different symptoms in different people. It is failure to appreciate fully this fundamental proposition that leads to so many errors.

Let me illustrate by one simple and extremely common symptom complex, namely frequency of micturition with pyuria. I suppose this is one of the commonest conditions that worry the general practitioner, yet all the resources of urology may be necessary to elucidate it, for it can be due to such entirely different conditions as prostatitis, cystitis or an infection in one or both kidneys, without taking any cognizance of the nature of the infection or any attendant complications.

A further illustration may be cited by that annoying symptom renal colic or renal ache, with an X ray picture that discloses no stone. I certainly see in my practice and in the out-patient departments of the hospitals a large number of patients who complain of renal colic or renal ache in whom there is no stone shadow. Hæmaturia, symptomless or otherwise, is another extremely common sign. Even to the skilled urologist it often presents great difficulty and its importance cannot be exaggerated.

I have put forward these few common clinical pictures to illustrate my opening remarks. I have it in view in this paper to discuss from the urologist's point of view some of the common diseases that are met with in everyday practice. I remarked above the striking thing about urologic diseases is the predominance of symptoms and I believe the purpose of this paper could be best achieved by first approaching the subject from the symptomatic side, with some concluding remarks on interesting phases of the separate diseases of the urinary organs.

#### FREQUENCY OF MICTURITION WITH OR WITHOUT PYURIA.

Patients with the symptom complex of frequency of micturition with or without pyuria are very numerous and women seem to be the chief victims. In its simplest form the complaint is of frequency of micturition alone or there may be urgent precipitancy, that is when the desire comes, the act must be promptly completed.

In the investigation of this type of case the first and fundamental procedure is to draw the urine from the bladder with a catheter. I regard it almost as an axiom that a correct opinion on the state of a woman's urine cannot be given unless the urine be properly drawn from the bladder by a catheter. The natural act of micturition so readily contaminates the urine with urethral, vaginal and vulval pus or *débris* that egregious errors occur from offering an opinion on it. I have repeatedly seen these mistakes occur. I used the word properly above with a purpose. The urethral orifice must be visibly exposed, its orifice carefully sponged with an antiseptic lotion and the urethra expressed or "milked" to exclude the presence of an acute or chronic urethritis. If this is not done, pus from a urethritis or vaginitis may be picked up in the eye of the catheter and introduced into the bladder. Here it mixes with the urine which being withdrawn as a pyuria, gives one a false impression. I offer no apology for giving this piece of elementary advice. I have seen humiliating errors occur through ignoring it. When the urine has been withdrawn, it will either be clear and sparkling when examined in a glass vessel or contain *débris* of some sort.

Let us take the first case in which the urine when poured into a glass vessel and held to the light is perfectly clear; an interesting problem. Now a good specialist must never lose sight of the fact that morbid processes in other parts of the body may have a focal incidence as it were. The insistent vomiting of some cerebral tumours or the cardiac phenomena of gall bladder diseases are two examples that occur to me. Such being the case, it is imperative that the total daily quantity of urine be measured; its specific gravity must be determined and the presence of sugar or other abnormal chemical contents be detected. A general examination of the vessels, heart, *sella turcica* and so forth must be carried out to exclude the presence of diabetes, arterio-sclerosis, interstitial nephritis and other general diseases, any of which may have a focal incidence in which the patient refers all the symptoms to the bladder. It can readily be seen that if a patient with say *diabetes insipidus* or arterio-sclerosis with interstitial nephritis is excreting large quantities of water, he may readily complain of frequency of micturition. I would recommend a simple physiological experiment to the interested inquirer. Let him on an empty stomach drink copious quantities of water and when the stomach is empty, drink again. Quite apart from the actual amount of water subsequently passed, he will notice that the water pressure, as it were, thus thrown on the kidneys manifests itself in the bladder as a repeated desire to micturate. I call this phenomenon the reno-vesical reflex. It is a most important reflex and I shall have occasion to refer to it again later. Alcohol in the form of gin or beer will produce the same phenomenon and in some people even tea or coffee. I do not refer to the actual diuresis which, of course, occurs, but to the disproportionate desire to micturate which is present even when only a small amount of fluid is

in the bladder. These general diseases need detain us no longer, as they are not pertinent to my subject.

Of the purely focal conditions which cause frequency with clear urine, some are well known, others are somewhat obscure. One of the commonest is that condition of the urethra in women known as caruncle. Some women in whom the condition is well developed, complain hardly at all; others are made miserable by the annoying "frequency" and often associated scalding. When the caruncle is visible, it can often be excised or destroyed by the electro or diathermic cautery, care being taken not to encroach too much on the normal urethral walls or to burn too deeply, lest a stricture be caused. Unfortunately the caruncle often extends beyond ordinary vision up to the urethra. Any form of good urethroscope will display it in its entirety when it can be totally destroyed by diathermy. I prefer a water distension instrument, such as Brown Buerger's cysto-urethroscope or the simple Braasch cystoscope.

I have had in recent years a number of cases of a condition that does not seem to me to have been adequately described. The condition is almost wholly confined to women, it is very elusive and yet a cause of much distress. The pathogenesis of the condition I am not prepared to discuss, but its clinical reality is certain. The disease consists of small papules, usually two or three or more, situated around the trigone area. When viewed with the cystoscope, they are seen to be about the size of a pin's head, are a dull red colour, slightly raised above the bladder floor and readily bleed on being probed. The very centre of the papule is often a minute ulcer. I have seen them on the trigone, on the urethral orifice, on the edge of the vesical sphincter and even in the upper portion of the urethra. They are exquisitely tender to the touch and, being in a sensitive area of the bladder, interference with them sets up an urgent desire to micturate. For their detection it is essential that no anæsthetic be used and I very rarely use any anæsthetic in a woman. When probing one of these papules I have often requested the patient to state what is felt. The invariable answer is a sharp pricking sensation with a desire to micturate and it can be further elicited that such are the symptoms of which the patient complains.

These sensitive papules are readily destroyed with the diathermic cautery through the cysto-urethroscope and the relief is very striking.

Cystocele is another condition which causes much bladder distress in women, but that condition is more in the province of the gynæcologist.

In the male various pathological processes around the *veru montanum* lead to a host of symptoms. Many of these are the legacy of an antecedent gonorrhœa.

To the casual observer the gonorrhœa may seem a thing of the past and the poor patient gets scant sympathy or he is relegated to the Hades of the accursed neurotic.

I frankly admit that the bitter complaints of pain, local and referred, of bladder disturbances

and other sensory phenomena are a tribulation to the medical adviser.

Nevertheless all these sensory phenomena have a real basis and properly applied treatment can produce in many cases a triumphant result.

I remember a major of artillery who acquired a gonorrhœa in West Africa some three years before I saw him. He had the usual train of sensory phenomena and had received scant service from the numerous physicians and not a few charlatans whom he had consulted. He had a stricture of the bulbous urethra and a papilloma of the *veru montanum*. Dilating the stricture and fulgurating his papilloma gave him complete relief. He has a touching gratitude withal, for I often hear from him in whatever part of the Empire he happens to be.

Such pathological conditions of the *veru montanum* are, moreover, extremely suggestive of infection in the seminal vesicles. A patient may have extensive spermato-cystitis with its attendant symptoms and pass clear urine. A not uncommon complaint is of a severe pain at the moment of ejaculation and the semen may contain blood.

It would take me into the intricacies of venereology to discuss this matter further. Moreover, I shall merely mention the question of aseptic stone in the bladder because it is so fully discussed in books on general surgery and so readily detected by means of X rays. I would merely mention the possibility of a large stone which may not contain sufficiently dense material to cast an X ray shadow.

I had such a one not long since and, moreover, might readily have missed it with the cystoscope. The skiagram failed to reveal it. On introducing the cystoscope and searching the floor of the bladder, no stone was seen. After some moments it hove in sight rolling like a large oil globule down the side of the bladder, slowly coming to rest on the floor. The stone was of low specific gravity and the water rushing in through the faucet of the cystoscope, had swirled it away from view. I now always shut off the water and wait a few moments.

I shall conclude this section by calling attention to the phenomena relating to the bladder as a result of pathological processes in the central nervous system. By far the most important is the "tabetic bladder." The clinical manifestations of *tabes dorsalis* are essentially those of disorder of the reflexes with loss of deep sensibility. The pupillary changes, the loss of the knee and ankle jerks, Romberg's sign and so on are all thus explained. When the other cardinal signs are present, disorder of the mechanism of micturition is easily understood. *Tabes*, like every other slowly progressive disease of the central nervous system, must obviously have an incipient phase. A certain proportion of the cases are initiated by interference with the bladder reflex. In the absence of the other signs the diagnosis may be very difficult. Patients sometimes complain for a long while of loss of the power of penile erection or of disordered micturition before other confirmatory signs manifest themselves. The urologist must ever be on the lookout for such cases.

The cystoscopic findings are usually characteristic; they are a diminution of deep urethral sensation and trabeculation of the bladder wall.

Most of the patients that I have seen have had at least one other important sign present, either the pupillary changes or a loss of the knee or ankle jerk, sometimes in only one limb. In one instance the condition was ushered in by complete loss of penile erection some fifteen years before. The patient had pupillary change, but did not develop any other sign of *tabes* and is still leading an active physical and mental life, despite a past history of much debauchery. Of the many organic diseases of the central nervous system that involve the bladder, it is impossible to offer a description here.

I cannot refrain, however, from a brief description of the functional disorders that are met with from time to time. I have under observation at present two patients with incontinence of urine. Both were brought to my out-patient clinic in the usual way on account of inability to "hold the water"; both were female children, respectively eleven and fourteen years of age, and their histories and physical findings were so alike that one description will suffice.

Briefly the complaint was of inability to hold water night or day. They were always wet. General examination of the various systems, with special reference to the central nervous system, elicited no abnormality. The cystoscopic findings were peculiar. There seemed to be undue laxity of the internal vesical sphincter, but the outstanding sign was complete anaesthesia of the urethra. It made a striking demonstration, the complete disregard with which both these children tolerated a violent probing of the urethra and trigone area. The area of anaesthesia did not correspond to any anatomical distribution of nerves and was therefore functional. A learned psychiatrist confirmed this opinion. Response to treatment has not been satisfactory so far. The practitioner should be on the watch for such cases, because he sees quite a number of young people complaining of inability to "hold the water."

There is another type of functional disorder of profound importance, not a few of which I have seen. It takes the form of frequent and painful micturition and often there is the additional complaint of painful coitus. Urologic investigation discloses no abnormality of the bladder or urethra. Gynaecological examination reveals no abnormality. The striking thing is the complaint of symptoms out of all proportion to the physical findings. Careful questioning elicits the fact of an unhappy estrangement between husband and wife. The condition is a psycho-neurosis with a focal incidence in the pelvis.

One case puzzled me a great deal at first, because of the consistent complaint of scalding and frequency. I could detect no abnormality whatever. Eventually, the lady confessed amidst tears that owing to her husband's overbearing and intolerant disposition she had come to loathe even the thought of his sexual embraces.



Recently I have had another case almost the counterpart of this. Treatment is obviously very difficult and more in the province of the neurologist or even the judge in divorce.

#### FREQUENCY OF MICTURITION WITH SCALDING AND PYURIA.

I now desire to discuss frequency of micturition with scalding where the urine contains pus. Such a combination of events is one of the commonest things seen in medical practice and half the science of urology is built upon it. No one could deal adequately with this subject in a short paper, but there are some fundamental principles involved and I shall confine my discourse to these.

No difficulty ought to occur in excluding a urethritis in male or female, but acute or subacute prostatitis in the male will sometimes betray the very elect. Following on a recent attack of gonorrhœa the diagnosis is easily made. The symptoms are frequency and scalding with pyuria. I am surprised at the frequency with which gonorrhœal cystitis is diagnosed. This condition is a rare and very serious disease. By far the commonest cause of the symptoms is prostatitis. When there is no history of gonorrhœa or merely an attack in the distant past, presumably cured, the diagnosis is not so easy. Pain, frequency and pyuria are the traditional signs of cystitis. It must be emphatically stated that acute or subacute prostatitis can produce all these symptoms and signs without involvement of the bladder, except perhaps the trigone area. The diagnosis is readily made by rectal palpation of the prostate. In a bad case it may be so palpably enlarged that it simulates very closely adenomatous enlargement. On the other hand an extensive infection of the prostatic acini can exist with no palpable abnormality. Midway between these extremes there is generally to be detected some irregular enlargement with areas of density here and there, alternating with areas of boggyiness. There is usually associated tenderness on pressure. The diagnosis is confirmed on finding pus in the prostatic fluid. With a finger on the rectum and the patient bending well forward, the prostatic acini are emptied by cautious pressure from the periphery of the gland towards the prostatic urethra. In this way the contents of the suppurating acini are expressed and the prostatic fluid as it drips from the meatus is caught on a slide, thinned out with a probe and examined under the high power of the microscope in the fresh state.

Healthy prostatic fluid is opalescent like milk and water, may contain numerous rounded bodies of varying size with concentric markings, the so-called lecithin bodies. There may be a few prostatic cells to the field. In a case of prostatitis the slide contains enormous numbers of pus and prostatic cells. A prostate damaged by an old gonorrhœa seems to be vulnerable to subsequent infection. Moreover, like other glands in the body, for example the pancreas, salivary and mammary, it can be infected through the blood stream or through its ducts which open on the surface. Unless the true state of affairs is recognized, the patient is treated

for cystitis for an indefinite period. The proper treatment for this condition is to express the contents of the suppurating acini (so-called prostatic massage) about once in five days. The result of this treatment is sometimes truly dramatic. Herewith is a short history of a case in point; it is quite typical of a number of others.

A gentleman contracted a gonorrhœa two years before. He had very little treatment; nevertheless he became apparently quite well and free from all symptoms of the disease.

Four months before I saw him painful frequency with pyuria developed rather suddenly. He was treated for cystitis with no improvement. Things gradually got worse, until he was micturating every quarter of an hour. Eventually his medical adviser fitted him with a rubber bottle which he wore inside his trousers. He was in a pitiful condition from pain, frequency and lack of sleep. His prostate was only slightly enlarged, but the prostatic fluid was loaded with pus. He promptly improved on a course of prostatic expression given once a week and was quite cured at the end of the sixth treatment.

Recently a patient kindly referred to me by Dr. Wilfred Evans had a similar condition. This type of case is so common, so frequently treated for cystitis that I consider this somewhat lengthy description justified.

Having excluded prostatitis and urethritis, it is most important to determine next the source of the pyuria, but before embarking on this venture a careful bacteriological examination of the urine must be made. The most imperative question to answer is whether the infection is tuberculous or not. The whole outlook of the case depends on the answer to this question.

The detection of tubercle bacilli in the urine is an easy matter when they are present in large numbers; but when few in number, their detection is a matter of great difficulty. In any suspected case of urinary tuberculosis, the urine must be repeatedly examined and the centrifugalized deposit injected into a guinea pig. Where there is a mixed infection unfortunately the guinea pig often dies of septicæmia in a few days, which adds to the difficulty, but when the urine is sterile on culture and acid in reaction (a highly suspicious combination), I always have the centrifugalized deposit injected into several guinea pigs, a dose being given to each every three or four days. In this way any intermittent appearance of the tubercle bacilli is more likely to be detected. The guinea pig is killed and examined at the end of about six weeks. Whether the urine is proved to be tuberculous or not, the patient must be submitted to cystoscopy to determine the source of the pus.

Hitherto I have made no mention of any associated symptoms connected with the kidneys or ureters. It might be thought that in the absence of such, the pyuria must be of vesical origin. It is this current belief that causes so many egregious errors.

In an earlier part of this paper I mentioned what I call the reno-vesical reflex. This phenomenon is most important, for through it a lesion of the kidney may manifest itself by purely vesical symptoms.

Some years ago a young medical man consulted me on account of an annoying frequency of micturi-

tion and pus in the urine. He had not one other symptom. Eventually we found tubercle bacilli in his urine. Cystoscopy disclosed a perfectly normal bladder. The pus was coming from the right kidney. The urine from the left was quite clear. I removed a tuberculous right kidney.

About the same time a young woman was referred to me by Dr. Alfred Gibson, with almost the same history, except that in her case the symptoms had existed much longer. Cystoscopy revealed a perfectly normal bladder with a right sided pyuria. She also had a tuberculous right kidney.

I could multiply these examples. It is therefore necessary, even if the symptoms are purely vesical, to perform cystoscopy.

If on cystoscopic examination a definite lesion is found in the bladder, say an extensive superficial cystitis, it is still necessary to determine whether the kidneys are involved or not, because the vesical condition with its predominating symptoms may be secondary to an infection on one or other kidney. I had a remarkable example of this some time back at the Balmain Hospital.

This woman, aged forty-five years, had been treated at intervals for cystitis for fifteen years. She had persistent and intense frequency and pain with pyuria. Bladder irrigation alleviated her symptoms greatly, which, however, recurred as severely as ever shortly after treatment ceased. Careful questioning elicited a history of mild, left-sided renal pain at intervals, but she regarded this as of very little moment compared to her bladder symptoms. A skiagram of her renal tracts disclosed no stone. Cystoscopy revealed an extensive and intense superficial cystitis. The efflux from the right ureter was clear, that from the left was purulent. Pyelography on the left side showed the kidney to be merely a shell of tissue with a hugely dilated ureter. Removal of this kidney and ureter and a course of bladder irrigation ended all her troubles; the infected hydronephrosis in this case was the source of the reinfection of her bladder.

Such cases are of common occurrence and it is useless to treat the bladder in the presence of an infected kidney.

I cannot discuss the various types of cystitis that are encountered, but mention must be made of one of them, chiefly on account of its prevalence and its tendency towards chronicity.

Clinically, it presents itself with the usual combination of frequency of micturition with slight scalding; it is never very bad, but it has an annoying insistence. Women frequently refer to it as a "cold in the bladder." They are often reticent about it. It has characteristic periods of remission and relapse. During an attack which may last some days to as many weeks, if the urine appears turbid under the microscope, there is a preponderance of epithelial *débris* from the bladder mucosa with some leucocytes. In the period of remission the urine may be clear or at most contains flakes which on microscopical examination are seen to be wholly made up of bladder epithelial cells. The cystoscopic findings are characteristic. The bladder mucosa is congested either wholly or in patches. During an attack this appearance is characteristic. During the remission period there are areas of normal mucosa alternating with patches of congestion. The trigone area is chiefly involved. The attacks respond

readily to antiseptic irrigation, the old silver nitrate solution is quite good and I find mercurochrome excellent. It is, however, difficult to eradicate the disease entirely and to bring the bladder mucosa back to normal. Hence the annoying relapses. This, in my experience, is one of the commonest inflammations of the bladder met with and women are by far the chief sufferers.

#### CHRONIC INFECTIONS OF KIDNEY AND BLADDER.

The various types and the numerous causes of these chronic infections in kidney and bladder will be briefly discussed later.

#### Renal Colic and Renal Ache.

Adhering to my theme of constructing this paper on a symptomatic basis, let me now direct attention to that very common symptom, renal colic. In its various manifestations which I shall discuss presently, it is a source of prolific worry to the practitioner.

Traditionally associated with stone, his worry is only aggravated when, as so often happens, the radiologist reports: "No stone detected."

To understand this subject properly, it is necessary to describe the various manifestations of so-called renal colic. In its classic form the pain starts in the costo-vertebral angle behind, follows the course of the ureter to end in the groin, bladder, penis, testicle or labium as the case may be.

It is not generally known that this sequence of events may be reversed. Such is undoubtedly the case. Without discussing the evidence, such a phenomenon is largely a ureteric colic and is seen in its fiercest form during the passage of a stone down the ureter. There is an entirely different series of pains which are true renal colics. From a close study of this subject for a number of years and from repeated observation on the living subject during the course of pyelographic work, I am convinced that true renal colic is a phenomenon almost wholly due to increased tension in the renal pelvis. It manifests itself in a variety of ways and many errors in diagnosis are made through failure to appreciate them.

The commonest presentation is a severe ache through the loin. There may be associated nausea or vomiting. The onset may be gradual or very sudden and be mild or severe at different times. The muscles may be held rigid, but are not usually on guard in the surgical sense. If the pain is very intense, there is sweating, pallor and difficulty in breathing. The patient calls it a bursting sensation. In some patients the pain is felt mostly and in others wholly in front, just below the ribs, where its likeness to gall bladder colic is very striking. Other patients feel the pain mostly and some wholly behind in the costo-vertebral angle or even higher up. In some patients the pain is felt lower down in the iliac fossa and may be confined to this region or is felt as a boring pain through the iliac fossa to the sacro-iliac region. The commonest error in such cases is to blame the appendix for the trouble. I see numerous patients who have been submitted to appendicectomy without relief of the pain.

Such then, in a general way, are the various forms in which renal tension pain may manifest itself.

From a carefully elicited history, the following facts may be made out. There is usually a long history of colics. The patient may be quite free from symptoms in the intervals or on the contrary there may be a sense of constant slight discomfort culminating in a severe colic from time to time. I had a remarkable example of this some time ago in a patient referred to me by Dr. Pawlett, of Mosman. This was a highly intelligent lady with the following history:

About every six weeks with remarkable regularity she had a violent attack of pain through the right loin. This was a true renal tension phenomenon and there was no radiation of the pain. The pain was so severe that morphine was necessary and lasted about twenty-four hours. The duration of the history was about two years. There were no clinical findings, either during the attack or in the intervals. No information was gained by X ray examination. In fact on purely clinical grounds a diagnosis of gall bladder colic would be justified. Pyelography indubitably located the pain in the kidney and disclosed a stricture of the lower part of the ureter. Dilatation of this stricture cured her.

Discussing her case with her afterwards, she informed me that while severe attacks were the distressing part of her complaint, she was nevertheless always conscious of a sense of tension in the loin in the intervals.

Sometimes patients complain of the pain in front just below the ribs and only when the colic is a severe one does it extend through the loin to the costo-vertebral angle behind.

When the right kidney is involved, the similarity to gall bladder colic is striking.

I have seen patients of whom on clinical grounds it would be impossible to say whether they had gall bladder or renal colic. One patient had seen a number of physicians, the majority favouring gall bladder disease. Pyelography reproduced her symptoms exactly, disclosing a kinked, thickened and tortuous ureter with hydronephrosis. At operation on her kidney, the peritoneum was incised and the gall bladder examined; it was quite normal.

Pyelography, while giving a picture of the pathologic conditions of the pelvis, calices and ureter, has the additional advantage (judiciously done, of course) of reproducing the pain of which the patient complains and so identifying it.

I know some critics are sceptical of the value of this phenomenon. As with every other diagnostic procedure in medicine there is a margin of error no doubt. However, making allowance for these limitations, the method is of tremendous diagnostic importance and accuracy and I venture to make this dogmatic statement that certain types of abdominal pain cannot be diagnosed in any other way than by pyelography. I might mention in parentheses that certain pathological conditions of the ovary cause severe pain extremely like renoureteral colic. Dr. Bruce Hittmann has demonstrated a number of them to me and he and I are collaborating on this matter at present.

In a previous paper by me<sup>(1)</sup> I described some of the commoner lesions of the ureter with the attendant pathology of the kidney and space does not permit any further pursuit of it here.

#### Hæmaturia.

The clinical symptom of passing blood in the urine is so frequent and may be fraught with such peril to the patient, that discussion of some important aspects of it is desirable. By hæmaturia I mean a hæmorrhage from some part of the renal tract and appearing in the urine in visible form.

The patient usually recognizes that he is passing blood and seeks advice on that account. Now the commonest error made is to regard hæmaturia as a disease. Elementary as this advice may appear to some, let me dogmatically state that hæmaturia is not a disease; it is a sign of disease and the worst service you can do your patient is to adopt those traditional therapeutic measures to stop the hæmorrhage (excepting, of course, those rare grave hæmorrhages in which life may be threatened).

Is it possible by clinical methods to determine the cause of the hæmorrhage or its source? In a very limited way, yes, but before discussing such types, it is essential to dispose of certain current fallacious ideas.

It is stated in some medical works that by the way the blood is mixed with the urine and so on and other associated symptoms like renal ache the source of the hæmorrhage can be determined. Such is not the case and urologists are every day realizing the utterly fallacious deductions that are so made. The only really reliable method of determining the source and the cause of the hæmorrhage is cystoscopy in conjunction with X ray examination and this should be done while the hæmorrhage is occurring. Even with these highly refined methods, the cause may still be in doubt.

Last year I saw a lady with a history of recent attacks of hæmaturia. When I cystoscoped her, the hæmorrhage had stopped and the source of it was not apparent. I most urgently advised a repetition of the cystoscopy at the next hæmorrhage (there were no other symptoms or signs). For six precious months she ignored this advice. Eventually she consulted me again and I found a left-sided hæmaturia. A pyelogram disclosed a "filling defect" of the upper calices. At operation a large hypernephroma of the upper pole was found which was quite impalpable by clinical methods. This foolish act may cost her her life, because at the present moment, fourteen months after operation, I strongly suspect that she has a secondary deposit in her lumbar vertebræ.

A growth of the bladder or kidneys may give a warning hæmorrhage, perhaps the only sign of its presence. If this warning is ignored, it may not be repeated again for weeks or months and time under these circumstances is all important.

I recently saw an autopsy on a patient who had died of hypernephroma of the right kidney with secondary deposits throughout the body. Eighteen



months before the patient had his first hæmaturia which had been treated by his physician with calcium lactate.

Another patient, a young man, had two attacks of hæmaturia without any other symptom in two years. He had a papilloma of the trigone area which fortunately for him was still a simple growth.

I could multiply examples, but let me at the risk of being accused of prolixity repeat that hæmaturia is not a disease, but a sign and may be a warning of a serious growth in the urinary tract.

I said above that in a limited way it is possible to determine the cause of hæmorrhage apart from cystoscopy.

Careful inquiry may elicit a recent history of gonorrhœa. In such case a clinical determination of an active prostatitis or spermato-cystitis with a history of terminal hæmaturia justifies a diagnosis that the hæmorrhage is of a local inflammatory origin.

In some types of acute gonococcal urethritis in the female, hæmorrhage from the inflamed urethra is a not uncommon observation. Local examination and digital pressure on the urethra will express the pus and start the hæmorrhage, confirming the diagnosis.

It seems hardly necessary to state that females often come complaining of hæmaturia, when careful examination detects the blood to be of uterine origin.

Apart from new growths, when the hæmaturia is very often "symptomless," stone is a quite common cause of hæmaturia. I do not refer to slight smokiness of the urine or the detection of red blood corpuscles by microscopic examination, but to the frank, obvious blood in the water.

The surprising thing about many of these conditions in patients whom I have seen, was the predominance of frank hæmaturia and the relative unobtrusiveness of renal symptoms. The explanation of this will be offered later. However, when a stone is detected by X ray examination and there are symptoms due to the stone, even if slight, the hæmaturia may be attributed to it.

Hæmaturia is, however, too comprehensive a subject for complete discussion here; I can but point out its importance as a sign and a few salient points connected with it.

The concluding part of this paper will be devoted to a description of some interesting phases of a few common diseases of the urinary organs.

#### URINARY LITHIASIS.

The problem of calculus formation cannot be discussed here; it is too complex. In Young's "Practice of Urology" there is a very learned chapter on it.

However, apart from whatever else may cause it, we know that urinary stasis, especially in the presence of infection often of a mild nature, is a potent factor in the production of stone. Stone formed in the bladder as a result of prostatic enlargement is a very familiar example. A calculus can form in the kidney under precisely similar con-

ditions and in such case obstruction in the ureter should be sought. A patient was referred to me by Dr. Wilfred Evans. The history was interesting, inasmuch as she exhibited what is known as the reno-renal reflex, that is the pain was referred to the kidney opposite to the one affected. Briefly, her history was one of bilateral renal colic at intervals for two years. There was pus in the urine and occasional hæmaturia. In the skiagram a shadow in the right renal area was seen. A careful anamnesis elicited this fact, that she never had pain on the left side alone. She often had mild pain on the right side alone, but when the colic was at all severe, the pain was felt equally on both sides.

Cystoscopic examination revealed the pus to be coming from the right ureter alone. Pyelography disclosed a ureter distended by the pyelographic fluid, with a distinct constriction at its junction with the kidney pelvis. The pelvis contained a large stone and there was some dilatation of the calices. At operation a large stone was removed by pyelotomy, but, important above all, a search was made for the cause of the constriction; an aberrant renal artery was found adherent to and pressing on the ureter at this point.

Here we have a vital sequence of events: pressure on the ureter, urinary stasis in the pelvis, infection and stone formation. A plain nephrolithotomy would of a surety invite recurrence of the stone and the high probability of a permanent urinary fistula in the loin. It should be an axiom of renal surgery that before nephrolithotomy is performed, absolute patency of the ureter must be assured.

I wish to refer to a patient with a urinary fistula in the right loin. Ten months before I saw her she had a stone removed from the kidney. The wound never healed; all the urine from that kidney leaked through the fistula. Cystoscopic examination revealed that no urine came down the ureter at all and a pyelogram demonstrated a block at the upper end of the ureter. Here again we have ureteral obstruction with urinary stasis and stone formation. The primary and fundamental lesion was the ureteral obstruction. Failure to recognize this has caused a permanent fistula in the loin, to cure which may necessitate a difficult nephrectomy. Stones that cast no shadow in the skiagram can offer a pretty problem. I had such a case from Dr. Hearne, of Arncliffe.

The history was one of frequent attacks of hæmaturia for almost six months; there was also a palpable, enlarged right kidney and a history of not very severe colics associated with it. X ray examinations were carried out at the Royal Prince Alfred Hospital, Sydney Hospital (on two occasions) and privately by one of our foremost radiologists and disclosed no stone shadow. Pyelography (on two occasions at fourteen days' interval) revealed a definite filling defect of all the calices and pelvis. The presumption was that a tumour was present in the enlarged kidney, fungating into the pelvis, thus producing the hæmorrhage and filling defect in the pyelogram. At operation a large stone was found forming a complete cast of the renal pelvis.

## RENAL INFECTIONS (NON-TUBERCULOUS).

Acute or chronic pyelitis is one of the commonest worries of the practitioner. Whether an infection of the kidney pelvis alone exists or not, is open to grave doubt. There is a growing conviction among urologists that such a disease does not exist; in other words in acute cases at least there is always involvement of the kidney substance itself. This matter has been fully discussed in recent issues of the journal, so I shall merely mention it in passing.

That train of symptoms known as chronic or recurrent pyelitis is real enough and embracing a variety of conditions, much ingenuity is called for to deal with it. The fundamental principle of surgery that infection is perpetuated by faulty drainage, is particularly applicable to the kidney and ureter. Of the various causes that invite and maintain infection by interfering with drainage from the kidney pelvis and ureter, some have been mentioned already in this article and others described in a former article in this journal.

Before any rational approach to a case of chronic or recurrent pyelitis can be attempted, it is imperative to determine the state of the kidney pelvis and ureter. A good pyelogram is of paramount importance and the whole prognosis and treatment of the case may depend on its finding. A large dilatation of the pelvis with displacement of the uretero-pelvic opening so that the pelvis always contains a residuum of infected urine, is a very common finding in conditions that trade under the clinical term of "chronic pyelitis." All the urinary antiseptics in the world will no more sterilize these kidneys than they will render the infected bladder of a prostatic patient aseptic. Relief of the obstruction is the vital surgical indication and it can be readily seen that in bad cases it may be a surgical impossibility.

In the milder types of dilatation of the pelvis, repeated catheterization and washing out of the pelvis may affect a cure or some improvement.

The following is a brief history of a bad case that illustrates my point.

A young woman, twenty-six years of age, of fine physique and apparent good health, was admitted eighteen months before to one of our teaching hospitals and there treated for about three to four weeks for "acute pyelitis" on the left side. She was apparently at that time very ill. She had only the usual medicinal treatment. Eventually she was discharged. For the last eighteen months she has suffered a lot from "chronic pyelitis," that is the urine is foul smelling, is loaded with bacilli and she gets recurrent attacks of left renal colic and fever. She has been in and out of various hospitals since, has had vaccine therapy and all the known urinary antiseptics. Cystoscopy revealed a normal bladder, the infected urine was coming from the left ureter only. Pyelography disclosed a tight stricture of the ureter near the brim of the pelvis. The ureter above it was dilated and tortuous. The kidney pelvis and calices were dilated. This kidney showed a very poor indigo-carmin excretion. I dilated the stricture up to No. 12 F. through the operating cystoscope and on numerous occasions washed out the renal pelvis with various antiseptics. She showed no improvement and it is hardly to be expected that she would. Eventually I removed her kidney. Such is an example of an extreme case.

The course of a case of so-called chronic pyelitis was relatively brief (about four months). The patient resisted vaccine therapy and all the known urinary antiseptics. Pyelography revealed the kidney to be little more than a sac of infected urine. Nephrectomy was the only rational procedure.

Stricture of the ureter when not tight enough to produce hydronephrosis above it, but sufficient to interfere with drainage, is a common condition. It is in such cases that brilliant results are obtained by ureteral dilatation. Strictures of this sort are common and many cases of chronic renal infection are maintained by them. If pyelography reveals no gross hydronephrosis and no alteration in the position of the uretero-pelvic junction, full dilatation of the stricture can be relied upon to give a brilliant result. Combined with the dilatation, lavage of the renal pelvis is a useful adjunct.

## Reference.

<sup>(1)</sup> Reginald Bridge: "The Ureter; a Clinical Study of its Commoner Diseases," *THE MEDICAL JOURNAL OF AUSTRALIA*, April 25, 1925, page 421.

THE LOUSE-BORNE TYPE OF RELAPSING FEVER AS PREVALENT IN THE ANGLO-EGYPTIAN SUDAN, 1926 AND 1927.

By C. E. G. BEVERIDGE, M.A. (Oxon.), B.Sc. (Melbourne),  
M.R.C.S., L.R.C.P.,  
*Sudan Medical Service.*

THE probable origin of relapsing fever in Africa was from the black troops returning to French West Africa after the war in 1921. It has spread over British and French West Africa, reaching Wadai in 1926 and thence into Darfur, the most western province of the Anglo-Egyptian Sudan. The mortality has reached epidemic figures. Reports as to the number of deaths must of necessity be somewhat inaccurate; however, a total of 200,000 deaths is probably a low estimate.

The disease has probably been carried east by travellers, especially pilgrims, to Mecca, as numbers pass through Darfur every year from West Africa. When it is realized that Darfur alone occupies an area of some 140,000 square miles, the difficulties of combating with the disease can also be realized. In addition must be taken into account the fatalistic character of the inhabitants. Parts of the country are very mountainous and parts are dry, sandy rolling plains. Transport is accomplished by means of Ford car, camels, mules, donkeys, bulls or horses.

The main objects of the work are: (i) to prevent the spread of the disease further east and (ii) to combat the local outbreaks.

The first is accomplished by the posting of quarantine stations along the main roads and near the main markets and supplies of water. Here travellers are deloused by the boiling of clothes, bathing of bodies, shaving of hairy parts and the liberal use of a mixture of fat and kerosene on any ornaments. Movement of people from an infected to a non-infected area was forbidden.

The second is accomplished by the (i) isolation of patients, (ii) injection of patients with "Nov-

arsenobillon," (iii) delousing of remaining villagers as above. This delousing is repeated every three days until the village is clear of disease.

Microscopy of blood slides taken from patients with pyrexia shows a very heavy spirillum infection and the main feature of all cases is the dull toxæmic condition exhibited.

A summary of the clinical features as noted in this epidemic is now attached.

#### Age and Sex Incidence.

From a total of one hundred and sixteen patients fifty-nine were female and fifty-seven were male, showing an equal incidence of infection in the sexes presumably. The female population being higher than the male, actually the latter are the more readily infected. This conforms to the note that men were found to be the more lousy. In a family, however, the first to get the disease is usually a woman and then the other occupants in turn.

The average age incidence was found to be in the male thirty-two years, in the female twenty-seven years. The extremes of age varied from three to seventy years. The age incidence may be higher, as previous outbreaks of the disease were not notified and the old and infirm were probably killed off by them.

#### Symptoms and Signs.

Typically an attack of relapsing fever occurs suddenly, a man or woman being presumably in perfect health one day and on the following day may be prostrated by the disease. The first symptom usually is a severe frontal headache, followed on the next day by vomiting of a bilious character. The vomiting may be severe enough to produce pain and tenderness in the epigastrium. Vomiting occurred in 31% of patients. An even more common symptom is that of diarrhœa which occurred in 47%. The stools are loose, but no blood is passed. At first they are coloured, though later, if jaundice supervenes, they take on a clay coloured appearance. From the first the patient complains of general body pains accompanied by weakness or complete prostration.

#### Temperature.

The temperature does not appear to rise to its maximum till the third or fourth day. It falls considerably by the sixth or seventh day. The evening temperature is somewhat higher than the morning. A relapse with corresponding rise of temperature may occur from the tenth to the eighteenth day, the temperature falling by the twentieth day. It was difficult to obtain histories of more than one relapse, but from records it is shown that several patients had a rise of temperature on the thirtieth to thirty-second days. This points to a second relapse. The rise on this occasion is not as high as during the first period of pyrexia. The maximum temperature noted was 41° C. (105.8° F.) and it occurred in the first period. During a second relapse the maximum noted was 38.8° C. (102° F.).

#### Pulse.

One of the characteristics of this disease is the increase of pulse rate out of proportion to the

accompanying rise of temperature. The rate increases from the moment of onset. The pulse is of a full and bounding character at first. The force of the beat diminishes suddenly, but the rate always remains high. The maximum pulse rate noted was 156 per minute.

#### Tongue.

The tongue is typically moist and furred, the fur being heavy and light brown in colour. The edges of the tongue are clean with occasional petechial hæmorrhages. If present, these appearances date from the onset.

#### Spleen.

Enlargement of the spleen was noted in 52% of patients, ranging from the just palpable spleen to the one extending to the umbilicus. In the latter case the spleen was full and congested, tender to palpation, with smooth rounded edges. The splenic index of normal individuals was not taken; this would have eliminated the enlarged spleen due to chronic malaria.

#### Liver.

Increase in size of the liver occurred in some 44% of patients. Jaundice was noted in some 20%, the remaining 24% were probably largely accounted for by the chronic alcoholism of the people. The liver in the jaundice patients was tender, with rounded edges pointing to a sudden congestion.

#### Jaundice.

A slight icteric tint in the eyes is noted in the great majority of patients. Later on there develops a definite jaundice with presence of bile in the urine and of clay coloured stools. Itching of the skin did not occur. Jaundice appears from about the seventh day.

#### Emaciation and Prostration.

Prostration occurs from the first in almost every instance except in some milder ambulatory attacks. Rapid emaciation is also one of the most consistent features of the disease clinically, combined with a dull lethargic appearance. The heavy intoxication by the spirillum reduces a well covered man in a few days to a mere shadow of his former self.

#### Other Symptoms and Complications.

##### Epistaxis.

Blood poured freely from the nose in a certain number of people, especially on the second day of the illness. The epistaxis was noted particularly in those people who lived at higher altitudes. It may be explained by a rise in blood pressure, combined with a diminished atmospheric pressure.

##### Facial Paralysis.

Facial paralysis was noted in 2% of patients. Recovery was the rule.

##### Joint Pains.

General body pains were always complained of. In certain cases the pain was localized either in the wrists or in the knees.



*Deafness.*

Deafness was encountered twice.

*Difficulty of Speech.*

Difficulty in speech is probably due to the extreme weakness. In some people, however, the tone of voice had definitely altered to a husky whisper.

*Bronchitis and Pneumonia.*

Bronchitis and pneumonia were often the terminal conditions in patients who died.

*Lunacy.*

An attack of relapsing fever definitely left one person insane.

*Immunity.*

No patients were noted who having recovered from one attack, succumbed to a second attack of relapsing fever. Lepers and syphilitics are not immune.

*Prophylaxis.*

All movement between villages was stopped. Isolation of infected persons was enforced. Regular delousing of villagers and villages was carried out. Removal of all inhabitants of a village to temporary shelters for a period of at least one month was insisted on. Destruction by fire of the house in the village belonging to the infected persons was employed.

*Medicinal Treatment.*

The administration of arsenical compounds has been shown to be specific. In this country "Novarsenobillon" was employed. This can be exhibited in practically every patient by the intravenous route. Intramuscular injection into the buttocks was employed for young children on several occasions with no ill effects locally.

The best time for administration is undoubtedly the period of pyrexia. Within twenty-four hours the temperature falls to normal or even subnormal. The pulse rate does not diminish to so great an extent. It may not return to its normal rate until thirty days after an injection. On the day following an injection the patient's condition is much improved, he is brighter in himself and is able to eat and sleep. He also regains the use of faculties which often in the pyrexial period have been in abeyance.

On the other hand, if the injection has to be given in the apyrexial period, the rapid general improvement does not occur. In many patients a second injection is required before they recover their normal state of health. A relapse may occur after an injection of "Novarsenobillon" in the apyrexial period.

The conclusion drawn was that the injection during the pyrexial period was preferable. If possible "Novarsenobillon," however, should not be withheld during the apyrexial period.

*Dosage.*

For adults doses of 0.45, 0.6, 0.9 gramme were employed. It was found that 0.45 gramme was as

effective as the 0.9 and not so dangerous. For children 0.3 gramme intramuscularly suffices.

Hospital treatment, of course, is impossible in these conditions.

*Mortality.*

Among the patients injected there was a mortality of 7%. The greater number of those who died were old people weakened by a prolonged illness. Amongst the young adults and middle aged the mortality after injection was practically nil.

Without medical treatment the mortality was estimated at between 60% and 80%. This is a new disease to these people, to which they have not as yet got any immunity.

Death may be rapid within forty-eight hours in fulminant cases or death may not occur until after thirty days.

This article is published with the kind permission of O. F. H. Atkey, Esq., F.R.C.S., Director of the Sudan Medical Service.

---

### PROTEIN SENSITIVENESS.<sup>1</sup>

---

By D. L. BARLOW, M.C., M.D., B.S. (Adelaide),  
Adelaide.

---

DURING the past few years the importance of sensitiveness to foreign proteins in the causation of various pathological conditions has become generally recognized, especially by those whose work lies in the treatment of disorders of the nose, throat, lungs or eyes. Interest in the subject has grown as a result of the demonstration of the diagnostic value of skin testing for sensitiveness and the introduction of specific treatment.

As a result of experience in these methods during the past few years the indications for their application have become more defined. For instance, it is easy to recognize a typical case of so-called "hay fever" clinically, but by skin testing it is possible to find out which pollen or pollens are responsible and then to treat specifically.

There are, however, many cases of recurring nasal irritation in which it is doubtful prior to skin testing whether protein sensitiveness is present or not. In many of these protein sensitiveness proves to be an important factor and unless this is recognized, treatment is apt to prove disappointing.

In a large proportion of asthmatics it has now been proved that protein sensitization is the underlying mechanism and it is unwise in any case to overlook this possibility. It is important that every person suffering from asthma should be tested as early as possible, in order that contact with any offending protein may be avoided or, if this is impracticable, in order that desensitization may be carried out before the condition becomes chronic or complicated.

Many other factors, of course, enter into the ætiology of various forms of asthma and even where

<sup>1</sup> Read at a meeting of the Ear, Nose and Throat Section of the South Australian Branch of the British Medical Association in May, 1927.

sensitization has been demonstrated, these need careful consideration in treatment.

The inherited tendency to develop the various manifestations of protein sensitization is well established, but there is no exact knowledge as to any constitutional difference between individuals who inherit this tendency, and those who do not.

The practical application of our knowledge will be discussed under the headings of diagnosis and treatment.

#### Diagnosis.

Both methods of testing, namely scratch testing and intradermal injection, have their uses. The scratch test is the better to use as a routine for pollen and epidermal proteins, whereas intradermal injection of the proteins in solution is frequently necessary to demonstrate sensitiveness to food and bacterial proteins. Intradermal testing is sometimes necessary even with pollens.

The reactions vary considerably in size and intensity and although a large proportion are quite definite, considerable experience is required in order to interpret correctly reactions of a less obvious character. It has been found that many of the slight reactions are of great importance as a guide to treatment.

Scratch testing with solutions of proteins is often fallacious and it is inadvisable to rely on negative results obtained by this method.

It is somewhat rare for a typical reaction to be obtained with bacterial proteins by the scratch test, but this does occur occasionally.

Intradermal testing with autogenous cultures (sterilized) is more often productive of results. Immediate reactions sometimes occur as with other proteins.

In one case in my experience an intense immediate reaction was obtained with a sterilized culture of *Staphylococcus aureus* from a chalazion. Considerable bronchial spasm resulted from subcutaneous inoculation of five millions of this culture, but treatment was highly successful when it was used as a vaccine in gradually increasing doses from one million upward.

Positive reactions are very frequently multiple, especially in pollen asthma. It is not uncommon to encounter sensitiveness to proteins belonging to separate groups, for example foods and epidermal proteins.

There is a considerable group of pollen patients in whom sensitiveness occurs to grass pollens only; many other patients are sensitive only to members of the *Compositæ*, including cape-weed, sunflower, cosmos, dahlia, daisy, gaillardia and so forth. Still other patients exhibit sensitiveness to many members of both these groups and other groups also. The degree of reaction to the various pollens usually varies considerably.

#### Treatment.

Specific desensitization treatment is indicated when it is impossible absolutely to prevent contact with the offending protein or proteins, but must not be considered to be the whole treatment of the affection.

In asthma, for instance, the general management of the patient's condition is most important. Any contributory causes require to be eliminated. Among these nasal or sinus disease is important and should be dealt with at the outset.

Cultures should be made from any infected foci in this area or elsewhere if indicated and the patient tested for sensitiveness to the micro organisms present. If sensitiveness exists, inoculation should be carried out.

Many hay fever patients obtain temporary relief from local treatment, such as cauterization, but the duration of this relief cannot be foretold and desensitization is always indicated by inoculation with the offending proteins.

In carrying this out all the offending pollens or epidermal proteins, as the case may be, are used in solution in mixture and a number of dilutions of the mixture are prepared for each patient. Treatment is commenced with a dilution which does not produce a skin reaction when tested by the scratch test method. On the average the dose commences with about 0.0005 milligramme and the doses are increased by approximately doubling the previous dose each time until a dose of one or more milligrammes is reached. Considerable variation is required owing to differences in the degree of sensitiveness and in the response to treatment in different individuals.

There is no justification for attempting to reduce this treatment to a fixed routine, as experience proves that such would be quite unsatisfactory. Throughout the treatment great care is required in deciding the dosage for each patient.

Preseasonal treatment in pollen asthma is the ideal, as a rule commencing locally in June or July. The result is very satisfactory if treatment is carried out thoroughly, as the majority of patients obtain complete or almost complete freedom from symptoms. The effect of treatment can be watched by retesting with the offending pollens at intervals. The skin reaction gradually becomes less intense, but does not always disappear.

Treatment should be repeated prior to the next season in pollen asthma of considerable severity or long duration. Relief from attacks for several years has resulted from thorough treatment.

It cannot be over emphasized that desensitization treatment should be undertaken as early as possible and not postponed until other measures have failed, for in the meantime the condition may become complicated by infection and then be much more difficult to overcome by treatment.

During the pollen season the treatment requires much care in regard to dosage. On the whole the quantities have to be increased more slowly, but the injections should be made frequently. If the dosage is well regulated, no appreciable reaction occurs.

Some patients respond very quickly to treatment during the season, whereas in the majority the symptoms diminish more gradually.

In asthma resulting from sensitiveness to epidermal or food proteins, if it is possible to avoid

these entirely, symptoms soon disappear. This is possible only in a limited group of these patients and in many others desensitization is indicated.

Epidermal asthma responds well to treatment as a rule, but further inoculation may be required at a later date.

Vaccines are frequently of great value in asthma when the latter does not appear to be due to pollens, food or epidermal proteins. They should always be made from cultures of fresh material, such as sputum or naso-pharyngeal swabs, and numerous pure cultures should be grown and after sterilization tested on the patient intradermically. Only those causing immediate or delayed reactions should be incorporated in the vaccine.

## Reports of Cases.

### THE PROGNOSIS IN FRACTURE OF THE SPINE OF THE TIBIA.

By C. E. CORLETTE, M.D., Ch.M.,  
*Surgeon, Sydney Hospital; Lecturer in Clinical Surgery,  
University of Sydney.*

FRACTURE of the spine of the tibia is recognized only by skiagram. It is not a common injury, and one man does not usually collect a wide personal experience. It is, therefore, desirable that experience should be recorded, and this is especially important because of the question of prognosis, and of the medico-legal aspect of these injuries. It is for that reason that I record the two following cases, hoping also that others may follow suit and contribute their own experience.

E.W., aged thirty-seven, male, was admitted to one of my beds at the Sydney Hospital, October 16, 1923. According to the history given, he had been struck across the left foot and the right knee by a sheet of iron. Examination on admission showed that there was a considerable amount of swelling below the left lateral malleolus, with tenderness over the swelling and over the dorsum of the foot. There was no crepitus. There was a synovial effusion in the right knee, and the joint movements were impaired. The X ray report sent up was: "No bone lesion of foot. Fracture of spine of tibia." The knee was put in plaster of Paris, and he was discharged to a convalescent hospital on November 9.

I saw this man again two years later (October 8, 1925) in connexion with a claim he was making for compensation. He stated that he had done no regular work since the date of his injury, but he had done odd jobs, and had worked as a rabbit trapper. It is usual for a rabbit trapper to do a good deal of walking. He stated that he had a weakness in the right leg, which would "give" at the knee, and that the knee felt stiff after resting. The stiffness lessened after walking about for a time. He stated that he was disabled from carrying weights. He said he felt some tenderness if pressed hard over the site of the joint on the antero-lateral aspect of the knee. He had noticed nothing else wrong, and the knee never swelled. Examination showed that he walked with a normal gait. There was complete freedom of flexion and extension. The circumference of both calves at maximum point was the same, namely 31.75 centimetres (twelve and a half inches). There was, in fact, no evidence of abnormality beyond his statements, and in my opinion there was nothing the matter with him.

Miss M.F., aged twenty-nine, came to me on December 15, 1925, about her right knee. About two years previously she had met with an accident in which she said the right knee was bruised. It did not seem very bad at first, but she suffered from some degree of pain from the time of

the accident. It grew worse, and six months later she could not straighten the knee without pain. Then she consulted a doctor, who kept her in bed for five weeks and ordered massage. This was eighteen months ago. She had been more or less lame ever since, and her knee had been swollen, on and off, during that time. At times, it had seemed nearly well, and at other times she had had to go to bed with it. My examination showed that there was some slight effusion into the joint, and that she could not straighten the leg, there being some 10° of flexion. The actual degree of flexion was guessed, not measured.

The knee was examined by X rays by Dr. J. G. Edwards, who reported: "There has been a fracture of the internal spine of the tibia without displacement. There is now some traumatic arthritis of the joint."

The treatment followed was to put the patient to bed and apply four and a half kilograms (ten pounds) weight extension to the leg. This gradually brought the limb almost but not quite straight, and in a fortnight it was put up in a plaster of Paris splint, the knee being previously well covered with cotton-wool. The splint was reapplied five weeks later, owing to the first having become loose. The limb was now practically straight. The splint was kept on for another seven weeks. My reason for giving this enforced rest in plaster of Paris was because she had not improved under movement, and because the pain had become intolerable at the last, before she came to me.

### Commentary.

Here were two cases of fracture of the spine of the tibia, both observed about two years after the injury. The one patient appears to have had the worst immediate after effects and was, in my opinion, quite well enough to work, and the one who suffered much less at the outset, was disabled.

The medico-legal aspect of these two cases is instructive. It shows how cautious one should be in giving a prognosis.

### MECKEL'S DIVERTICULUM.

By G. WIEN SMITH, M.B., B.S. (Adelaide),  
*Clare, South Australia.*

THE rarity of the following case impels me to give an account of the patient's history.

On September 7, 1926, I was called at 8 p.m. to a hut sixteen miles away. The patient, J.C., a boy of twelve years, strong and healthy, had had no serious illness before. He was awakened at 4 a.m. by a severe pain in the lower part of the abdomen. The pain continued all day, but varied in severity. He vomited a little watery fluid at 8 a.m. and was a little easier for a few minutes. He vomited again at 10 a.m. after having taken magnesium sulphate, again at 2 p.m. and 5 p.m. after broth. His bowels were open twice in the morning.

On examination I found him to be a red faced boy, lying in bed on his back, obviously in pain. His temperature was 36.7° C. (98° F.). His pulse rate was 100 and his respiratory rate 20. His tongue was moist and had a slight white fur. Nothing abnormal was detected in his heart or lungs. His abdomen moved with respiration. There was distinct tenderness in the right iliac fossa, especially on deep pressure a little below McBurney's point. There was no muscular rigidity. Hyperextension of the right thigh caused pain.

A diagnosis of acute appendicitis was made. The patient was given sixteen milligrammes (a quarter of a grain) of morphine by mouth and was removed to hospital for immediate operation. A soap and water enema was administered and a few small, hard faecal masses were passed. Dr. K. C. Godfrey administered ether with Shipway's apparatus. He vomited almost at once; the vomit was a yellowish fluid. This was the first time since 5 p.m., that is for a period of six hours. He took the anaesthetic badly and stopped breathing twice for about



one minute. McBurney's incision was made. There was free fluid in the peritoneal cavity. The appendix was found to be intensely injected. It was removed with all speed. Not being satisfied that the condition of the appendix was the cause of so much fluid in the abdomen, I mopped up the fluid and felt a mass in the pelvis. The incision was enlarged and the mass was brought into the wound. It was seen to consist of small bowel distended and dusky. A foreign body appeared to be enclosed in it. Further investigation revealed that there was an intussusception. This was easily reduced and it was found that it originated in a Meckel's diverticulum, about 3.75 centimetres in length. About 22.5 centimetres of bowel and the diverticulum were of a dark plum colour and had lost their shine. The damaged bowel was wrapped in cloths soaked in hot saline solution. As the bowel wall did not respond to the heat, it was assumed that it was gangrenous. The patient's condition was causing grave anxiety. A hypodermic injection of half a milligramme ( $\frac{1}{120}$  grain) of hydrochloride of strychnine and 0.5 cubic centimetre of "Pituitrin" was given. An injection of saline solution was started into the subcutaneous tissue of the axilla. The total amount injected was thirty cubic centimetres.

The gangrenous bowel was clamped and resected. The patient's condition at this time was so grave that a Paul's tube was tied in and two deep, through and through silkworm gut sutures were inserted.

By one o'clock on the morning of September 8 the patient's condition had improved considerably. He continued to improve to some extent until September 12 when he began to show the effect of loss of fluid. On this day he was given a preliminary injection of 7.5 milligrammes (one-eighth of a grain) of morphine and 0.2 milligramme ( $\frac{1}{120}$  grain) of atropine sulphate and 112 cubic centimetres of ether with 3.5 cubic centimetres of paraldehyde in olive oil were injected into the rectum. The anaesthesia was good, but it was necessary to apply a few drops of chloroform to the mask to remove the rigidity. The wound was reopened and the ends of the bowel were brought into the wound. It was seen that the cut ends of the gut were sloughing for about 1.25 centimetres. These were excised. End to end anastomosis was performed. The turbid fluid in the pelvis was removed by mopping and a drainage tube was inserted. The wound was closed by means of two through and through silkworm gut sutures. The patient was returned to bed in about fifteen minutes.

Recovery was hampered by abdominal distension which was relieved by turpentine enemata on three occasions. The bowels acted naturally on the morning of September 15, 1927. The patient was discharged on October 12, 1927.

On June 16, 1927, he was perfectly well. He had been able to ride four miles to school. The wound was firmly healed.

#### INTRACTABLE BLEEDING FROM A LEECH BITE.

By SYDNEY J. WOOLNOUGH, M.B., Ch.M. (Sydney),  
Blackheath, New South Wales.

A CHILD, E.R., *etatis* three and a half years, was brought to my surgery after midday on December 25, 1927. She was a member of a motoring party on tour. When about to sit down to dinner the parents noticed a trickle of blood down the child's leg and on investigation discovered that her underclothing was saturated. A leech was found near by, which was killed and found to be full of blood. After some unavailing attempts to stay the bleeding, the child was rushed twenty miles in by car. The blood had seaked through a large bath towel and well into a small eiderdown quilt and the child was very pale and weak. A certain amount of blood clot was lying between the thighs and pressure on the lower part of the abdomen produced a free flow from the vagina, which on examination was found distended with blood and weak clot. There were no marks of violence or injury externally and the source of the bleeding was beyond the range of inspection in so young a child. The vagina was first doused with hot hypertonic saline solution. Then with the aid of a large sized ear speculum and a pair of

Wilde's aural forceps the small vagina was packed with a strip of gauze soaked in weak adrenalin solution. Further bleeding was negligible and the packing was removed at the end of thirty hours. The father states that both he and the mother are subject to profuse nose bleeding, but the child had always been healthy and was not a bleeder. The child could not state when the leech bit her and complained of no discomfort other than that occasioned by the treatment applied. Another child in the same party was bitten on the leg by a leech an hour or two later.

## Reviews.

### DISEASES OF THORACIC ORGANS.

IN the fourth volume of the revised Osler's "Modern Medicine," dealing with diseases of the respiratory system and diseases of the circulatory system, the high standard set by contributors to the earlier volumes is well maintained. Additions to our knowledge of the diseases affecting the thorax have perhaps not been so lavish during the last few years as in relation to some other diseases, but the reader will find the additions have been numerous enough to lead to considerable recasting of several of the articles.

There will be few who will fail to feel that they have learned something after reading the opening chapter on the physiology of respiration by George W. Norris and Thomas McMillan, who have handled a most difficult subject in a most lucid manner. Another valuable contribution under the heading of respiratory diseases is that of Francis M. Rackemann on the phenomenon of hypersensitiveness in general and its relation in particular to hay fever and asthma. It is pleasing to find rather more than the customary amount of space devoted to diseases of the diaphragm and readers will find food for thought in the paper devoted to diaphragmatitis. It is so usual to speak casually of the diaphragm as being "drawn up" in infections involving this region that it may be forgotten that this is really an indication that there is disabement of the powerful muscle that usually plays the largest part in expanding the lower portion of the lung. Those, however, who, harassed by failure to relieve a persistent hiccup, turn up this chapter in search of guidance, will find Dr. Landis, the author, a broken reed, for he can spare less than a page for this troublesome form of spasm and not a single line for its treatment. A similar curious omission occurs in the article on bronchitis where it will be found that in referring to acute bronchitis Dr. McPhedran describes the symptoms, but says nothing about the physical signs.

Of the six hundred pages allotted to diseases of the circulatory system a rather undue proportion, two hundred pages, is devoted to congenital heart disease. Dr. Maude E. Abbott, however, who supplies the article, has succeeded in producing a most admirable monograph on this difficult subject to which anyone confronted with one of these comparatively rare cardiac disorders, can confidently turn for help.

The selection of Sir Thomas Lewis to write about the rate and mechanism of the heart beat was an appropriate one in view of the large part he has himself taken in elucidating so many of the problems concerning the arrhythmias. Those who have not read Sir Thomas Lewis's monographs dealing with this subject, will learn much from this article. It is to be regretted, however, that the reference to electrocardiography is so cursory, for this is just the book to which the general practitioner turns for a simple account of any new adjunct to diagnosis. We doubt very much if anyone with no previous knowledge of electrocardiography could get a connected idea of the subject from the disjointed references found here. Moreover, electrocardiography is now over twenty years old.

<sup>1</sup> "Modern Medicine, its Theory and Practice," edited by Sir William Osler, Bart, M.D., F.R.S., Re-edited by Thomas McCrae, M.D., assisted by Elmer H. Funk, M.D.; Volume IV; Diseases of the Respiratory System, Diseases of the Circulatory System; 1927. Philadelphia: Lea and Febiger. Sydney: Angus and Robertson, Limited. Royal 8vo., pp. 1011, with illustrations. Price: \$9.00 net.

Two of the best chapters in the whole volume are contributed by Alexander E. Gibson on hypertrophy, insufficiency and dilatation of the heart; we feel sure it would be to the advantage of the whole community if these pages were read with understanding by every medical practitioner.

Dr. Moore's account of functional diseases of the heart, while containing much valuable information, is badly put together and makes hard reading. On the whole, however, we have few criticisms to offer and heartily welcome Volume IV to our library.

### THE SURGERY OF THE LIVER, PANCREAS AND GALL-BLADDER.

"SURGICAL DISEASES OF THE GALL-BLADDER, LIVER AND PANCREAS AND THEIR TREATMENT," by Dr. Moses Behrend, is a most interesting and useful book. The author is apparently a man of wide experience in his subject and has published numerous articles on this and allied subjects. The volume is very well published, consists of 278 pages and is divided into fourteen chapters, with a carefully prepared index and 101 illustrations. It commences with a chapter on the development of the liver and pancreas followed by one on anatomy. In these, as in the whole book, the author reveals an aptitude for expressing himself clearly and in few words. A special chapter is given to the anatomy of the ducts and vessels in the region of the foramen of Winslow, on a knowledge of which the author lays particular stress. This chapter is accompanied by a number of illustrations showing a bewildering array of variations in the arrangement of these ducts and vessels.

In the following chapters the physiology, pathology and symptomatology are well summarized. Emphasis is laid upon the danger of delaying operative interference too long in the presence of chronic jaundice, especially when the Charcot syndrome supervenes.

The chapter on diagnosis is short and to the point and includes a section on cholecystography. The author then introduces his theme, to which all the rest is but a prelude. After summarily dismissing medical treatment as a failure in all gall-bladder diseases, he strongly advocates cholecystectomy as opposed to cholecystostomy, provided that the "open" method is used. In this method the right border of the gastro-hepatic omentum is incised and the cystic duct and artery tied by sight. He emphasizes the foolhardiness of blindly tying these structures without first laying them bare. He claims that operative damage to the common duct thus brought about is probably the most important and most easily preventable cause of obstructive jaundice. He insists again upon an intimate knowledge of the anatomy of the region of the foramen of Winslow. He gives it as an axiom that in all acute gall-bladder conditions operative procedures should be delayed until all inflammatory symptoms have subsided.

A very interesting chapter follows on operations for the relief of chronic jaundice and cholæmia. The author mentions cholecystostomy only to condemn it and goes on to describe various methods of procuring internal drainage. He points out the dangers with which procrastination is fraught in these cases, for the toxic effects of bile in the blood are numerous and serious. He makes the interesting but very debatable statement that every patient with chronic jaundice should be operated upon with as little delay as possible, for, even if a definite mass is felt, it is impossible to be sure that a carcinoma exists or that the condition is hopeless until the abdomen is opened.

There follows a chapter on the prognosis and complications of cholecystectomy and one on injuries and diseases of the liver. The diseases of the pancreas and their treatment are dealt with in the author's usual concise manner, occupying one short chapter.

The last chapter gives some interesting results obtained by ligating the hepatic artery in animals.

<sup>1</sup> "Surgical Diseases of the Gall-Bladder, Liver and Pancreas and their Treatment," by Moses Behrend, A.M., M.D., F.A.C.S.; 1927. Philadelphia: F. A. Davis Company. Royal 8vo., pp. 278, with illustrations. Price: \$4.00 net.

The book is interesting and easy to read and the author succeeds in compressing a great deal of useful knowledge into a small space. Budding surgeons should find the two main chapters, those on surgical treatment, particularly interesting and helpful.

### PUBLIC HEALTH—INDIA.

THE sixth edition revised and largely rewritten with the advice and assistance of Colonel A. B. Fry, formerly Professor of Hygiene, Calcutta School of Tropical Medicine, makes "A Treatise on Hygiene and Public Health with Special Reference to the Tropics," by Dr. Birendra Nath Ghosh, not only as primarily intended a textbook for students in India, but a work which can be commended to all students of public health.

There is not only the usual information given under the caption water, air, ventilation and so forth of the ordinary textbook, but many little details showing a wide, general and up-to-date knowledge of the subject. Practical application of general principles are given in definite instances, such as the general duties of the municipal authorities in respect to the supply of water under the *Calcutta Municipal Act, 1913*. Especially excellent is the description of the artificial purification of water including chlorination and the control of filters.

The effects and discomfort of a confined atmosphere as due to increased temperature, increased humidity and stagnation of air, are in accord with the teaching of Leonard Hill.

There is a useful chapter on occupational hygiene and offensive trades. In view of the forty-four hours week in Australia, it is interesting to note that under the *Indian Factories Act* no person should be employed in a factory for more than sixty hours in any one week and for more than eleven hours in any one day.

The chapter on soil, houses and buildings, although adapted to Indian conditions, should be of particular interest to those dwelling in the tropical portions of Australia and her mandated territories. Food, diet in India, vegetable foods, animal foods, beverages and condiments are dealt with in an interesting way by which many useful facts, not usually given in textbooks on hygiene, are noted.

One of the best and most informative chapters of the book is that dealing with the disposal of human excreta. The details given of the various types of latrine and the method of laying out trenching grounds make this work of value to military as well as civil sanitarians who have to supervise or control conservancy systems.

The type of water closet with the squatting plates with two foot rests on either side of the pan, placed on a level with the floor, if adopted generally in public conveniences, would remove obvious objections and secure a natural position in defecation. There is an excellent description of a septic tank installation as well as of an activated sludge plant.

With regard to infection and carriers of infection, the rôle of insects in the transmission of malaria, yellow fever, plague, filariasis, sleeping sickness and kala-azar is well described. With regard to insecticides, kerosene or petrol mixed with some essential oil, such as oil of sassafras or eucalyptus or tar oil, has evidently proved as effective in India as they did in Sydney during the last outbreak of plague. The "Lelean Sack Disinfectant," a light, simple apparatus for disinfecting clothing and bedding by current steam is well described and illustrated. An extract from Major James's "Malarial Fevers," giving the duties of mosquito brigade men, is a valuable portion of an exhaustive and practical exposition of how to deal with the mosquito problem.

The final chapters on village sanitation, sanitation of fairs and religious festivals afford some idea of the special problems of the sanitarian in India and the East.

<sup>1</sup> "A Treatise on Hygiene and Public Health with Special Reference to the Tropics," by Birendra Nath Ghosh, F.R.F.F. & S. (Glasgow); Revised and largely rewritten with the advice and assistance of Colonel A. B. Fry, C.I.E., D.S.O., M.D. (London), D.P.H., D.T.M. & H.; Sixth Edition; 1927. Calcutta: Scientific Publishing Company. Crown 8vo., pp. 682, with illustrations. Price: 10s. net.

## The Medical Journal of Australia

SATURDAY, JANUARY 28, 1928.

### A Retrospect.

#### Pædiatrics.

DURING the past year the thymus, its relation to the condition known as *status lymphaticus* and the so-called thymic symptoms have received much attention. Edith Boyd has investigated the pathological records for two years of *post mortem* examinations on children over two weeks and under fifteen years, with a view to the determination of the normal variations in size of the thymus gland. She finds that the average weight of the gland at birth is thirteen grammes. E. A. Morgan, A. H. Rolph and A. Brown after an extensive study have come to the conclusion that the average weight of the thymus from birth to two years is from seven to ten grammes and that all glands weighing more than ten grammes are abnormal. They claim that glands weighing from twenty to thirty grammes must be regarded as hyperplastic. Edith Boyd places the average weight at six months at twenty grammes and at thirteen years at thirty-five grammes. In poorly nourished children the gland was found to be considerably lighter. Her investigations revealed that the fluctuations in the weight of the thymus are concomitant with the fluctuations in the body weight. The growth curve in a well-nourished child is of the same type as that of the lymphoid tissue in general. She states that the anatomical picture described by Paltauf as that of *status lymphaticus* represents the normal thymus and lymphoid tissues of the well-nourished child. Failure to recognize accidental involution has caused confusion in regard to the weight of the thymus and has led to misconceptions in regard to *status lymphaticus*. These findings have been confirmed to a large extent by W. Wasson, who employed radiological means of examination. Morgan, Rolph and Brown have noted a temporary reduction in size during acute infective processes. They state

that the symptoms of enlargement of the thymus are largely mechanical. X ray treatment in their hands has proved eminently successful.

R. B. Wade has performed ramisection on three children suffering from Hirschsprung's disease, a condition the treatment of which is very unsatisfactory. In all the patients there was a relief of all symptoms, of distension and of visible peristalsis. N. D. Royle has offered the following explanation of the physiology of the condition. The internal *sphincter ani* and O'Beirne's sphincter are maintained in a condition of plastic tonus by their sympathetic innervation. In Hirschsprung's disease there is failure of these sphincters to relax. The object of ramisection is to remove part of the sympathetic innervation to the colon and to the sphincters and thus to reduce the excessive tonus.

J. D. Rolleston has reviewed the recent advances in the ætiology, diagnosis, prophylaxis and treatment of the acute exanthemata. He concludes that *Streptococcus hæmolyticus scarlatinae* is probably the causal agent of scarlet fever. Active immunization by injection of a so-called toxin derived from cultures of the hæmolytic streptococcus may yield satisfactory results. The matter, however, is still in the experimental stage. Antitoxic serum prepared with the use of the scarlatinal toxin in concentrated form should be given a trial in the early stage of all acute attacks. Rolleston is of opinion that the prophylactic injection of the serum of persons convalescent from morbilli is of considerable value in affording temporary protection from an attack or in diminishing the severity of the attack, should it occur. It is particularly recommended for ill-nourished children living in unhygienic surroundings. Active immunization against scarlatina has been employed on very many occasions. According to Toomey, Fullerton and Kishman, the immunity lasts for eighteen months. R. Angel Money and V. R. Woodhill have found passive immunization with antitoxin effective in arresting the spread of an epidemic, but other observers claim that there is no definite evidence of the power of the antitoxin to confer a passive immunity.

In connexion with the study of rickets much attention has been paid to the effect of feeding with foodstuffs that have been exposed to ultra-



violet irradiation. Irradiated cholesterol and ergosterol given in minute doses have been employed by A. F. Hess with good results. He has dealt in detail with the physiological action and biochemical changes induced by these irradiated substances. Leonard Findlay has investigated the bone changes in renal and coeliac infantilism and their relation to rickets. He has arrived at the conclusion that the bone deformities of renal infantilism are identical with those of a true low-calcium rickets. The primary cause of the condition is an inability of the kidney to excrete phosphate in adequate quantity. The same defect in the metabolism of phosphate occurs in endogenous rickets. The calcium content of the blood is usually within the normal range of variation, but it is low as compared with the phosphorus content. It is suggested that this is due to the mobilization of the calcium from the bones as a preventive mechanism against tetany. Healing of rickets often occurs at periods in which the waste of phosphorus is checked or after active growth has terminated. Findlay holds that treatment by ultra-violet rays is contra-indicated for renal rickets. He has adduced evidence to prove that this treatment tends to aggravate the bone changes. He suggests that the explanation of this is to be found in the fact that ultra-violet light raises the phosphorus content of the blood by increasing phosphorus absorption. In these circumstances the balance between the calcium and the phosphorus would be disturbed to a still greater extent. Findlay has also shown that the bone deformities in coeliac infantilism is rhachitic in character. Coeliac rickets is a manifestation of defective fat absorption leading to a deficiency of vitamin D, calcium and phosphorus.

Douglas Galbraith has contributed a valuable article in this journal on hilus tuberculosis in children in the course of which he has emphasized the importance of exposure to infection in the history of children with signs of pulmonary lesions. H. M. Hewlett has supplemented Galbraith's studies by recording the radiographic signs of chest complaints.

#### Orthopaedic Surgery.

Hitherto the most effective treatment for the disabilities associated with paralysis of the deltoid

muscle has been arthrodesis of the shoulder joint. Transplantation of muscles and tendons has yielded unsatisfactory results. L. Mayer has recently introduced a new method which promises to give better results. He transfers the *trapezius* to the insertion of the deltoid, lengthening the tendon by strips of *fascia lata*. Internal slipping of the new tendon is prevented by the formation of a groove in the acromion process. A complete range of abduction has been conferred by this procedure and the æsthetic effect is more pleasing than that of arthrodesis.

Paralysis of the gluteal muscles also presents a difficult problem to the orthopaedic surgeon. Two new methods have been put forward during the year. F. D. Dickson has transplanted the proximal end of the *tensor fasciæ femoris* to the region of the posterior spine of the ilium and has obtained uniformly satisfactory results in forty patients. F. R. Ober has followed Lange's lead and has used the *sacro-spinalis* muscle. Instead of silk, Ober has fashioned a tendon of *fascia lata* to attach the caudal end of the *sacro-spinalis* to the region of the trochanter. Ober claims that the operation is satisfactory in that there is an improvement in walking.

A considerable amount of original work has been carried out in connexion with the various forms of arthritis. L. G. Rowntree and A. W. Adson noticed that the vasomotor disturbances of rheumatoid arthritis are characterized by diminished circulation, with cold, clammy limbs and pallor of the skin. They therefore determined to perform rami-section. Their patient had suffered from stiffness and pain with joint swelling and cyanosis for six years. Bilateral sympathetic ganglionectomy and ramisection were performed. The pain disappeared and the patient was able to walk more freely. The coldness and clamminess of the limbs also disappeared. Balcombe Quick has given an account of the measures he has adopted in the treatment of acute suppurative arthritis of the knee joint. He has obtained satisfactory results from transverse arthrotomy. He urges that a permanently stiff joint is preferable to an artificial limb and that it is difficult and risky to mobilize the joint, after drainage has been employed. Marion A. Radcliffe

Taylor suggests that osteoarthritis of the hip joint may be due to continued mechanical misuse of the joint.

Both the conservative and the operative treatment of tuberculous arthritis have been warmly advocated by their respective protagonists. A. Rollier contends that he can cure tuberculous disease of the hip or other joint with rest and heliotherapy; Russell A. Hibbs asserts that it is hopeless to deal with tuberculous joints in a conservative manner. He has evolved a method of fusing the hip joint by an extraarticular process. He claims that this procedure lessens the period of convalescence by years.

Abnormal mobilization of the sacro-iliac joint at times necessitates an operation for the fixation of the joint. W. C. Campbell has described an extraarticular method to achieve this purpose. Incidentally he has simplified the technique. Low back pain and inflammatory affections of the sacro-iliac joint, as well as the relationship between low back pain and sacralization, have been dealt with by K. S. Macky at the Australasian Medical Congress (British Medical Association), Dunedin, 1927, and by D. J. Glissan. Greater clarity has been brought into the teaching of the nature and causes of the processes giving rise to low back pain by these thoughtful papers. J. Renfrew White has presented the subject of visceroptosis in a new light.

#### Ophthalmology.

Physiological, pathological and biochemical problems have figured largely in recent ophthalmological research. Some of this work does not appear to have an immediate application, but the value of knowledge gained for the purpose of obtaining a better understanding of the structure and functions of the body is not less because practitioners are at present unable to make use of it in the treatment of pathological conditions. W. S. Duke-Elder has published important work on the ocular circulation and on the nature of the intraocular fluids. He maintains that the aqueous fluid is not a secretion, but a dialysate.

Kirby has succeeded in cultivating lens epithelium *in vitro*. Other workers have studied the effects of

injections of lens protein and have evolved a non-operative treatment of cataract. The matter, however, is still on trial.

H. J. Wilkinson has published a thoughtful article on the Argyll-Robertson pupil. He proves that in the absence of light reflex, pupillary contractions on accommodation depend on the accompanying convergence.

Ida Mann has submitted a monumental work on the embryology of the eye. In close connexion with this work the experimental transmission of ocular defects in rabbits has evoked much interest and not a little controversy.

S. R. Gifford and J. J. Keegan have extended their observations of the treatment of luetic optic atrophy by intracisternal injections of mercuric chloride and one of the arsenobenzol drugs. They adduce strong evidence in favour of this method as compared with intradural injections. F. H. Verhoeff has employed diphtheria antitoxin in concentrated form for the treatment of sympathetic uveitis. He claims that excellent results are obtainable if a sound scheme is followed. J. H. Stokes is convinced that ocular syphilis is amenable to treatment by arsenic compounds, provided that the treatment is prolonged and systematically planned. He has found that if the treatment is stopped too soon, the syphilitic process may become fulminating and serious damage may result. The infection should be regarded as systemic rather than local and its treatment should not be stopped until every trace of spirochætal activity has disappeared.

J. N. Evans has devised a method which he terms angio-scotometry, for the plotting out of blind areas in the field of vision. The method promises to be of considerable value.

At the Congress at Dunedin, A. M. Morgan put forward the view that concomitant strabismus is due to a large extent to weakness of the fusion sense. Squint occurs when the desire for fusion is less than the effort needed to align the eyes correctly. He proved by evidence collected with much diligence and skill that hypermetropia is unimportant as a cause of squint. He found, however, that heterophoria or hypermetropia had to be associated

with weakness of the fusion sense before the latter could give rise to concomitant strabismus.

J. Ringland Anderson gave an admirable account of the significance and application in practice of red-free ophthalmoscopy. He attaches importance to the study of the macula and urges the employment of this method of examination for the purpose.

#### Hygiene.

During the year 1927 satisfactory progress has taken place in the science of hygiene.

The hygiene sections of the League of Nations and the International Labour Office have made several investigations in the field of hygiene and issued many publications. The International Labour Office has published an article on white lead giving an impartial survey of the facts, including its nature, the danger to which its use may involve, the technical aspects of the problem of the use of white lead in paint and the efficacy of restrictive regulation in the painting trades. The brochures on "Occupation and Health" issued from time to time by the International Labour Office are most useful as references for persons interested in the subject of industrial hygiene. The International Health Board of the Rockefeller Foundation is still carrying on its endeavours in the prevention of hookworm, yellow fever, malaria and other diseases.

In connexion with the responsibilities of the Australian and other Governments concerned with health questions in the Pacific Islands the report of the International Pacific Health Conference, held at Melbourne in December, 1926, has been published. This conference has already resulted in a close cooperation and interchange of information between the local administrations in the Pacific. Preliminary action has been taken to give effect to the resolutions of the conference in regard to the establishment of an intelligence service of coordinated research and of cooperation in matters of maritime quarantine.

In the field of venereal disease an international agreement signed by the principal nations of the world including Australia under which these nations have agreed to establish in their ports clinics for the free treatment of seamen suffering

from venereal disease, has now resulted in adequate free treatment being available to seamen in practically all ports of the world of any importance, thus largely diminishing the opportunity for spread of infection from country to country and the introduction of new strains of the disease. In Great Britain important legislation has been passed to control the importation, manufacture and sale of "Neosalvarsan" and other similar therapeutic substances and of biological products generally.

The International Sanitary Convention of 1926 is now awaiting ratification by the various governments and has already been ratified by Great Britain and France. Australia has signified its intention to ratify. This convention not only lays down the measures which the signatory nations are required to take for the control of plague, cholera, small pox, yellow fever and typhus fever within their own territories and for the prevention of the spread of these diseases to other countries by land or sea, but also those measures of protection which a nation is authorized to impose in order to avoid the introduction of infection. The new Convention marks a great advance on the 1912 Convention which it supersedes, in applying to the control of the diseases dealt with the latest advances in the knowledge of preventive measures.

The Royal Commission on Health in its report of November, 1925, made a recommendation that a permanent Federal health council should be instituted to meet regularly for the purposes of devising measures for the cooperation of Commonwealth and States and of States with States and for promoting uniformity in legislation and administration where advisable. This recommendation has now been carried into effect and in January, 1927, the first session of the Federal Health Council of Australia was held. This session being the first was necessarily devoted to the determination of procedure, definition of major issues and decision as to the course to be followed in the future. It was possible, nevertheless, to arrive at a complete understanding upon many points of scientific importance for administrative detail. The Council realized that permanent and progressive improvement could be made only after careful examination of each problem and deliberate discussion of evidence after collec-



tion and marshalling. As it has been established as a permanent body, it may examine each problem in a continuously progressive manner from session to session, taking action at each stage when action is possible.

By invitation of the International Health Board of the Rockefeller Foundation the permanent heads of the Health Department of three Australian States have been afforded the opportunity of visiting the United States to study the methods in force for the prevention of disease. Each of the officers concerned has also visited England with the same object. Considerable benefit should result to Australia from the advantages to be derived from these study tours.

In the field of public health engineering steady progress has been made in Australia during the past year. Especially is this evident in the larger country towns, many of which have under consideration proposals for the installation of sewerage or for the improvement of their water supplies. The sterilization of water by the addition of chlorine has been demonstrated during the year at Swan Hill, Victoria, where a plant was installed and operated on the town water supply under the supervision of the Division of Public Health Engineering, Commonwealth Department of Health. As a result of this demonstration many towns have had their attention directed towards their water supplies and further installations of chlorinators are anticipated. During September, an important conference of engineers, health inspectors and members of local government bodies was convened by the Commonwealth Director-General of Health. Over two hundred delegates, including representatives from every State in Australia, assembled in Melbourne and conferred for over a week. While considerable benefit resulted from the reading and discussion of numerous papers, the chief value of the conference was that it brought together public health engineering workers from all parts of the Commonwealth and the personal contact thus established was of inestimable importance.

An industrial hygiene conference between representatives of the Commonwealth and State Departments of Health and the State Departments of

Labour was held in May, 1927, and as a result of this conference measures are being taken to have placed on record the hygienic conditions existing in Australian factories and the conditions under which female labour is employed. The problem of the prevention of accidents is also being considered by a special committee. The Commonwealth Court of Conciliation and Arbitration has referred to the Industrial Hygiene Division of the Commonwealth Department of Health for investigation the physical and working conditions of persons employed in certain industries. The report of the Medical Officer in Charge of the Commonwealth Health Laboratory, Kalgoorlie, on the result of his examination of 4,067 mine employees engaged in the metalliferous mines of Western Australia is at present in the hands of the printer and will shortly be ready for issue.

During the year the New South Wales Department of Health has created divisions of maternal and child welfare and tuberculosis, while in the State of Victoria a tuberculosis officer has been appointed to place measures for tuberculosis control upon a sound basis.

Campaigns have been entered upon in the States of New South Wales and Queensland for research into and for treatment of cancer. The Commonwealth Government has arranged for the purchase of £100,000 worth of radium and has appointed a specialist to advise as to methods of use.

Dr. Charles Badham, Medical Officer of Industrial Hygiene of the New South Wales Department of Health, has conducted several investigations into the effect of occupation upon health, which have resulted in measures of great practical value being introduced to lessen the dangers incident to the particular occupations inquired upon.

The Medical Research Council and the Industrial Fatigue Research Board have again made many valuable contributions to the science of hygiene. Several writers have drawn attention to the importance of chronic rheumatism and cardiac diseases. Up to the present the prevention of these diseases has received but scant attention in Australia.

Watkins-Pitchford has published in *The Journal of Industrial Hygiene* an admirable article on silicosis in the South African gold mines.

## Abstracts from Current Medical Literature.

### RADIOLOGY.

#### Cholecystography.

W. H. STEWART and E. J. RYAN (*British Journal of Radiology*, April, 1927) contribute a paper on technique and interpretation in cholecystography by the oral method. The authors receive the "Iodeikon" preparation in sealed ampoules containing 3.5 grammes and pack it in gelatine capsules and coat them with keratin. The method is quite safe to use in the consulting room. They employ gas tubes and Potter-Bucky diaphragm. Careful preparation is followed by preliminary radiography before the dye is given. A meal rich in fats is given at 6.30 p.m. and three hours later two capsules of the dye are given every fifteen minutes until 3.5 grammes have been taken. Skiagrams are taken at 9.30 in the morning and at 1.30. Food is then allowed and a further examination made on the next morning. The gall bladder shadow should appear twelve hours after the dye is taken and it should be slightly diminished in another four hours. After food it should diminish rapidly or disappear completely. Motting of the gall bladder points to small calculi, but care must be taken to exclude duodenal gas shadows. The dye may overshadow a calcium stone which would be seen before the dye was taken. Gall stones may be rendered visible after the gall bladder has emptied. Adhesions cause deformity of outline, as do intrinsic lesions causing pressure. The absence of shadow occurs in cystic duct blockage. Persistence of shadows indicates a pathological lesion. Faintness of shadows means a disturbance of the function of concentration and a lesion, as does a delayed appearance of shadow. The authors follow the gall bladder examination by an ordinary opaque meal.

SHERWOOD MOORE (*British Journal of Radiology*, B.I.R. Section, August, 1926) deals with cholecystitis and cholecystography as an aid in its diagnosis. Cholecystitis is often a localized infection of the gall bladder through the lymphatics. An infection by mucosal extension is exceptional. The symptoms in cholecystitis are unreliable and it is difficult to differentiate the condition from chronic appendicitis and peptic ulcer. Sodium tetraiodophenolphthalein is the best salt for use in cholecystography, owing to its high specific gravity. The dye enters the gall bladder and casts a shadow. The shadow generally increases up till the eighteenth hour. The author does not consider that the taking of food alters the shadow of the gall bladder. The test is of use in disclosing the functional condition of the organ. In the normal gall

bladder the shadows are usually seen after the twelfth hour and have disappeared after the twentieth hour. If no shadow is obtained, it means an insufficient liver function, an obstructed duct, a diseased mucosa or failure of absorption if given by mouth. A faint shadow means diseased mucosa or lymphatics. If the shadow appears promptly and is of uniform size at all sittings, it points to an infiltrated gall bladder wall. The gall bladder varies greatly in size and form; a fixed gall bladder means pericholecystic adhesions. The contraindications are cardiac disease and arteriosclerosis. The technique must be correct and immobility of the patient is essential.

SHERWOOD MOORE has published a summary of his views on cholecystography (*Radiology*, September, 1927). He prefers the intravenous method. The dye is administered early in the morning and the radiographic examinations are made at four, eight and twenty-four hours later. Graham's isomer of the original salt, sodium phenoltetraiodophthalein, has certain advantages over the sodium tetraiodophenolphthalein. It can be given in smaller doses, is less toxic and concentrates better in the gall bladder. The discharge of bile from the gall bladder is probably the result of elastic recoil following duodenal relaxation after the ingestion of food. At rest the duodenum is a collapsed tube and the tonic contraction shuts off the flow of bile when no food is present. Therefore, a fat meal is no better than any other meal in causing contraction of the gall bladder. If the gall bladder is visualized, it is strong evidence of the integrity of its walls and in the author's clinic an inflamed and rigid gall bladder has been shown to be devoid of concentrating ability. The errors in interpretation arise through excess of ingenuity and a lack of appreciation of the function of concentration of the gall bladder. Bacterial invasion is not essential to cholecystitis. The latter may be due to chemical causes connected with cholesterol metabolism and such conditions frequently precede stone formation. Stones are present in only 50% of gall bladders affected by cholecystitis; cholecystitis may occur without thickening of the gall bladder walls and if thickening is present, it points to a very late condition. Duodenal bulb deformities can frequently be shown to be due to cholecystic adhesions.

#### Pyelo-Ureterography.

V. J. O'CONNOR and A. REMMERT point out the value of uretero-pyelo-graphy as a diagnostic aid in renal disease (*Radiology*, August, 1927). The examination should be reserved until other urological data are complete and should be considered as one of the helpful steps in reaching a diagnosis; it should not replace analytical, functional and bacteriological methods. The new combination X ray and cystoscopic tables have permitted of more perfect technique

with examinations in the prone and erect positions. Congenital anomalies of various types are met with, such as reduplication of the pelvis, horseshoe kidney, polycystic disease, single kidney. Hydronephrosis of varying sizes from twelve to five hundred cubic centimetres occurred. This condition was found more than three times as frequently on the right side as on the left. In renal tuberculosis pyelography should not be used if the diagnosis has been confirmed otherwise. Destruction of a major calyx suggests tuberculosis. Renal neoplasms are characterized by typical displacement or contraction of the pelvis with narrowing and elongation of the calyces. In twenty-nine patients right-sided nephropothesis was discovered; in only two was it seen on the left side. The condition was bilateral in five persons. Ureteral stricture is easy to determine; the X ray examination should include the whole urinary tract.

#### Enlargement of the Thymus.

H. C. KING (*Radiology*, August, 1927) writes on pathological enlargement of the thymus gland and hyperplasia of other lymphoid tissues of the body in which small accidents, minor operations or even light anaesthesia causes failure of respiratory and cardiac activity. Thymic enlargement is looked upon as being present in connexion with faulty respiration at birth (*asphyxia neonatorum*). Symptoms are respiratory difficulty, cyanosis, asthenia, snuffles, thymic stridor, convulsions, projectile vomiting. In later life the child is pallid and poorly nourished with enlarged tonsils and lymphatic glands. X ray examination reveals a symmetrical widening of the superior mediastinum with convex lateral borders. The gland fits over the base of the heart and increases in size when the baby cries. X ray and radium therapy are the only methods of treatment. Four millimetres of aluminium are used as a filter with 120 kilowatts and four milliamperes of current; the distance of the tube from the skin is 37.5 centimetres and the duration of the exposure is from three to four minutes. This dose is repeated twice. The patient improves immediately and is free from symptoms in three weeks.

### PHYSICAL THERAPY.

#### Röntgen Ray Treatment of Benign Gynaecological Affections.

PAUL WERNER (*American Journal of Obstetrics and Gynecology*, January, 1927) states that irradiation of the spleen for all kinds of hæmorrhages in benign gynaecological affections has been attended by considerable success. The technique is very simple. Above the area of the spleen established by percussion a field is drawn fifteen centimetres long and ten centimetres wide. Irradiation is carried out with the patient lying on her right

side, with the same apparatus, tube and filter generally used for intensive treatment. The local distance from the skin is forty centimetres; the dosage measured on the skin is one-third of the erythema dose. The conditions amenable to such treatment are puberty hemorrhages in young girls, hemorrhages with adnexal masses, miscarriages, climacteric metrorrhagia, hemorrhages from fibromyomatous uteri or presumably due to disturbances of the ovaries in the absence of definite pathological findings. In 70% of the patients a favourable effect followed a single irradiation. The results of repeated irradiations were not satisfactory. The treatment probably removes a temporary disturbance. In the course of his obstetrical work the author has known severe melæna and vomiting of blood in infants to be stopped by a single irradiation of the spleen for five minutes without any other therapy. All hemorrhage ceased immediately and the infants recovered. The prompt action of irradiation of the spleen renders the procedure particularly valuable in metrorrhagia from fibroma or incident to the climacterium. After spleen irradiation has failed success has been obtained by subsequent irradiations of the liver. Irradiation of the hypophysis has been found useful. Small doses were administered to the hypophysis for hypofunction or dysfunction of the ovaries. A field two centimetres by three centimetres is outlined between the outer circumference of the orbit and the anterior border of the external auditory meatus. One-third of the skin erythema dose is given to this area on either side of the head. No injurious effect upon the patient could be discovered. Good results were obtained in dysmenorrhœa and amenorrhœa. Although the results were not always permanent, a second treatment six or eight months later brought the desired relief in all patients. This treatment was extended to gynecological conditions not obviously due to glandular disturbances, such as leucorrhœa and pruritus vulvæ and improvement and even permanent cures were obtained. The treatment has also been found to be effective in certain types of pregnancy toxicosis, especially hyperemesis and hypersalivation. Though effective in dysmenorrhœa, amenorrhœa or climacteric molimina, irradiation of the hypophysis will be found to leave certain patients unaffected. In some it has been found that the desired therapeutic result can still be obtained by applying the same dose of Röntgen rays to the thyroid gland.

#### Metastatic Tumours of the Thyroid.

S. GINSBURGH (*The American Journal of Roentgenology and Radium Therapy*, September, 1927) discusses the condition of bone metastases from thyroid tumours. She states that it is a frequent occurrence not only in carcinoma and sarcoma, but also in simple adenoma of the thyroid gland. The metastases occur during the early

stages when the general health is unimpaired and the constitutional symptoms absent as well as in the late stages. Bulky single or multiple metastases may occur in association with moderate size or small thyroid adenomata, either growing actively, quiescent or even receding. Malignant metastatic thyroid tumours may occur in bone from a primary simple adenoma of the thyroid which may be so small and symptomless that it is overlooked during life. They may be centrally situated and may not encroach upon the capsule; they therefore fail to cause any adhesions to neighbouring tissues or any invasion of the lymphatic glands. They may be histologically benign and indistinguishable from a simple adenoma or colloid goitre. The adenomata that lead to metastases in bone, undergo cell necrosis and cause bone erosion and destruction with a resulting inflammatory reaction which may be accompanied by recurring attacks of fever. In the early stages pain and swelling may be due to the inflammatory reaction rather than to any demonstrable bone destruction and distension. When the bony cortex is eroded and perforated, fluctuating and pulsating swellings are common. The thyroid metastases in bone may functionate and undergo fluctuation in size with menstruation. The remissions occur not only in the carcinomatous and sarcomatous thyroid metastases, but also in those associated with thyroid adenomata. Even pathological fractures may heal spontaneously and bulky, pulsating metastatic thyroid tumours destroying bone and disseminating through the blood stream may exist for many years and kill the patient without giving rise to metastasis to the lungs. Though usually multiple, the metastases may remain single. The slow growth renders these recurrences at times amenable to surgery. Owing to the radiosensitiveness and the common multiplicity of thyroid bone tumours, treatment by radium and Röntgen rays is favoured.

#### Irradiation of Red Blood Cells.

In contrast to the extraordinarily radiosensitive lymphatic and myeloid cells, the red blood cells manifest only slight sensitivity. The result of Franz Kromeke's investigations reveal that every effective irradiation with Röntgen rays exerts an injurious effect only upon the ultimate erythropoietic apparatus (*Strahlentherapie*, 1926). Small and medium doses produce an increased regeneration and the injury is still reparable, but after large doses the effects are no longer reversible. These conclusions are based on studies made upon healthy rabbits under normal conditions of nutrition. The irradiations were made in such a manner as to avoid exposing any important internal organ or structure except portions of the bone marrow and blood vessels. The exposures were made upon the first two lumbar vertebrae with varying doses, the rest of the animal's body

being carefully shielded. The rays were produced by 180 kilovolts, three milliamperes and filtered through 0.5 millimetre of copper at a distance of twenty-three centimetres. Examinations of the blood included determinations of the count, hæmoglobin, protein and sugar. Studies were also made of the vitally stained blood. Within the first three to four days no difference was noted between the irradiated and the non-irradiated vertebrae of the same animal in the number of nucleated red cells of the marrow nor was there any difference between the young and mature cells. It is therefore clear that no local overcompensating regenerative process occurs in the irradiated vertebra. No important difference was found between the erythropoiesis of the normal animal and that of the two irradiated animals within the first two days. Consequently the erythrocytosis in the blood following irradiation cannot be explained as a result of a sudden local or general regeneration. It appears that the erythrocytosis occurring in the blood shortly after irradiation is due not to an increase from new formation, but to an apparent increase probably caused by a change in the peripheral circulation having origin in cell breakdown products and lipoids acting on the vegetative centres and the vascular nervous system.

#### Inflammatory Affections.

I. SOLOMON and A. BLONDEAU (*Journal de Radiologie et Electrolgie*, September, 1927) detail their experiences in the treatment of inflammatory affections. It appeared that in at least two-thirds of their patients radiotherapy had a favourable action on the evolution of the pathological conditions. There was frequently a rapid fall of temperature with great relief of the general condition. When the swelling could be demonstrated without difficulty, the rapid regression with or without the formation of pus could be demonstrated. The dose applied was that of 500 French units, a twenty-five centimetre equivalent spark gap and a filter of five millimetres of aluminium or 0.5 millimetre of copper and a single field covering the whole of the affected region. A second and third application was given eight and fifteen days after the first if the latter appeared insufficient. No better result was obtained after other methods of treatment in persons who did not improve after three applications. Among those who yielded excellent response to treatment, were patients with puerperal septicæmia, acute phlegmon of the breast, acute strumitis, subhyoid abscess, acute cervical adenitis, whitlow, inflammation of the pelvic adnexa and maxillary infections associated with wisdom teeth. The authors conclude that properly executed this treatment is neither disagreeable nor dangerous and has become a therapeutic agent of great importance in the treatment of inflammatory infections.



## British Medical Association News.

### SCIENTIFIC.

A MEETING OF THE SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held on October 27, 1927, at the Adelaide Children's Hospital. The meeting was a clinical one.

#### Detubation After Diphtheria.

DR. EDGAR BROWN presented a child, aged six years, who had had an attack of laryngeal diphtheria at the age of eighteen months. Intubation had been performed during the acute attack and later tracheotomy. On two occasions an intubation tube had been inserted and an attempt had been made to remove the tracheotomy tube. The child's breathing had become distressed and the attempt had in consequence to be abandoned. Dr. Brown had tried to block the external opening of a tracheotomy tube, having an opening on the convexity of the outer tube through which the inner tube with a similar opening had been passed, so that the upper end was placed at the level of the vocal cords. Even this had been unsuccessful. The difficulty in these circumstances was to cure the subconscious fear of the child. He asked for suggestions for treatment. There was no stricture of the larynx.

DR. R. H. PULLEINE said that he had treated a child with a similar condition. This child had been in a state of terror when an attempt had been made to remove the tube. He had inserted an intubation tube and had removed the tracheotomy tube during sleep; the child had not noticed it. Three days later he had removed the intubation tube again during sleep.

DR. GILBERT BROWN suggested that a two-way tracheotomy tube might be used. The airway could be gradually diminished by inserting into the orifice a series of corks with decreasing holes bored through them.

#### Infective Iritis.

DR. EDGAR BROWN's second patient was a young married woman who had had two children and no miscarriages. Three months previously she had complained of pain in the left eye and loss of sight. This had been ascribed to a severe attack of iritis which had almost subsided under treatment. As the condition had not disappeared completely, the tonsils, which had been found to be infected, had been enucleated by dissection. The iritis had been cured. No abnormality had been discovered on X ray examination, nor had any pus been found in the nose after packing with adrenalin gauze. It had been found that several teeth had abscesses at their roots. These teeth had been extracted a fortnight after the removal of the tonsils. The operation had been followed by a short, sharp attack of iritis which had cleared up in a few days. Examination of the fundi had disclosed definite optic neuritis of the left eye which had not been present a few days previously. There had been no vomiting or headaches or other neurological signs. The blood was normal and had not yielded a reaction to the Wassermann test. Dr. Brown said that he would appreciate any suggestions as to the cause and proper treatment of the condition. He ascribed it to infection from the teeth or tonsils.

DR. R. H. PULLEINE held that as the condition was unilateral, there must have been a unilateral cause. He suspected that there was a latent sinusitis in the sphenoid indirectly due to some other septic focus.

#### Congenital Dislocation of the Hip.

DR. MALCOLM L. SCOTT showed a girl, aged twelve years, who had had a congenital dislocation of the right hip joint. This had been reduced when the child was two years of age. Dr. Scott exhibited the skiagrams as well as the child to demonstrate the result. The length of the limb was not reduced, while the function of the leg was unimpaired. A well formed acetabulum and head of the femur were seen in the skiagram.

#### Cystic Hygroma.

DR. H. GILBERT called attention to a girl, aged fourteen years. At the age of four months her tongue had been

pushed upwards to the roof of the mouth by a swelling under the tongue. She had been unable to suckle. The swelling had been found to consist of cysts varying up to the size of a pea. The tumour was a cystic hygroma. The main swelling had been excised and many other cysts had been punctured. In May, 1927, she had had an attack of stomatitis and several nodules had ulcerated and broken down. There were still a few sago grain bodies in the tongue. The movement of the tongue was not normal, but it was improving.

#### Ununited Fracture of the Tibia.

DR. GILBERT presented a girl, aged thirteen years. This child had had a fracture of the tibia at birth; a second fracture had occurred when the child was fourteen months old. It had not united. She had been treated by the introduction of an intramedullary bone graft taken from the opposite tibia. There was firm union and the leg was strong.

#### Perineal Hypospadias.

DR. L. A. WILSON thought that the members would be interested in a child, aged six months, who had been brought to the hospital for determination of its sex. It resembled a female. The cleft scrotum resembled the labia and the small, curved penis was hidden by an overhanging prepuce. The testicles were discovered one on either side of the scrotum. The urethral orifice was placed 2.5 centimetres anterior to the anus. His elder brother had glandular hypospadias.

#### Addison's Disease.

DR. KENNETH S. HETZEL presented a male, aged fifty-two years, a driver, who complained of pains in the small of the back, radiating upwards and of attacks of dizziness and faintness. The symptoms had been present for two years. His hands and feet had become cold and numb. He had had severe cramps in his legs. He could not do his work on account of weakness and general lethargy. His appetite was good, but he did not feel satiated after a meal. A fortnight before he had wandered from his home and had been lost. He had been a moderate consumer of alcohol, but was a heavy smoker. His past history and family history were good. There was no negroid blood as far as was known. There was no indication of past venereal infection. On examination he was found to be a thin, apathetic man. His radial arteries were uniformly thickened. His systolic blood pressure was 100 millimetres and his diastolic pressure was 70 millimetres of mercury. His fundi were normal. There was a blue-black pigmentation of the inside of the cheeks and patches in the hard and soft palate. His heart, lungs and abdomen appeared to be normal. His reflexes were normal as was the urine. There was no general or patchy pigmentation of the skin. The diagnosis was Addison's disease.

Dr. Hetzel's second patient was a male, a school boy, aged eight years and eight months. He had complained of anorexia, nausea and vomiting of five months' duration. He had never been a good eater, but for some time his appetite had been failing. He could not look at meat without feeling nausea. The vomiting occurred once a day irrespective of meals. He had started his school during the course of the year. He had been very backward and slow in speech. There had been noticeable pigmentation of the skin since the boy had been six months of age. This had increased greatly and seemed to be more evident when the attacks of vomiting occurred. His bowels were regularly opened and micturition was normal. The patient tired easily and was not inclined to play with other children. This disinclination had increased. There were two other children in the family and both were well. The patient's father had spots of pigmentation. The boy was below normal in intelligence. His head circumference was fifty centimetres (nineteen and a half inches). The pigmentation was especially visible on the face and extremities. It was found in the folds, the axilla, the genitals and the exposed parts. There were numerous pigmented spots or moles scattered over the whole body as well as a general increase in the pigment of certain areas. There was no pigmentation

of the oral mucous membrane or palate. Small patches of leucoderma were present. The heart, lungs and abdomen were apparently normal. The systolic blood pressure was 90 millimetres and the diastolic pressure was 70 millimetres of mercury. The urine was normal. No reaction was obtained to the von Pirquet test. Vomiting had occurred about once a day since the child had been admitted to hospital. The diagnosis was possibly Addison's disease.

#### Orthopaedic Conditions.

Dr. H. S. NEWLAND, C.B.E., D.S.O., exhibited a cinematograph film illustrating various characteristic gaits met with in crippled children, including those with congenital dislocation of the hip, *talipes equino-varus* of the congenital and acquired type and spastic diplegia. He also showed a baby, aged thirteen months, with oxycephaly and complete syndactylism of the fingers and toes.

#### Cerebellar Tumour.

Dr. Newland also showed a boy, aged twelve years, who had had a decompression performed for a cerebellar tumour. There had been great improvement of the optic atrophy. His gait was still ataxic and he had nystagmus.

#### Scarring After Burns.

Another child presented by Dr. Newland had had extensive burns of the neck and face. The scarring had led to deformity and torticollis. He had employed pedicle skin grafts and had obtained a great improvement in the condition.

#### Glandular Enlargement.

Dr. C. T. C. DE CRESPIGNY asked for suggestions as to the diagnosis of the condition of a boy, aged five years, who had enlarged glands in his neck and mediastinum. No abnormality had been detected in the blood picture. He had experienced difficulty in arriving at a diagnosis from the microscopical appearances of sections of the enlarged glands.

#### Hanot's Cirrhosis.

Dr. DE CRESPIGNY showed a girl, aged three years, with great enlargement of the liver and a history of convulsions. No reactions had been obtained to the Wassermann and the Casoni tests. The blood appeared to be normal. He had made the diagnosis of Hanot's cirrhosis.

### NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association.

Anderson, Leighton Rowland, M.B., 1926 (Univ. Sydney), District Hospital, Orange.  
Stewart, Douglas Macdonald, M.B., Ch.M., 1924 (Univ. Sydney), East Maitland.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association.

Canny, Alan John, M.B., B.S., 1927 (Univ. Sydney), National Bank of Australasia, Strand, London, W.C.  
Egan, Ernest John, M.B., Ch.M., 1925 (Univ. Sydney), Womens' Hospital, Crown Street, Surry Hills.  
Hoskisson, Dora Ann, M.B., Ch.M., 1926 (Univ. Sydney), Women's Hospital, Crown Street, Surry Hills.  
Lane, Raymond Charles, M.B., M.S., 1914 (Univ. Sydney), Castlereagh *via* Penrith.  
Mulhearn, Norman St. Clair, M.B., Ch.M., 1921 (Univ. Sydney), Bellingen.  
Pritchard, Denis Adrian, M.B., Ch.M., 1923 (Univ. Sydney), H.M.A.S. Port Moresby.  
Stevenson, Robert Baynton Comrie, M.B., Ch.M., 1924 (Univ. Sydney), Government Savings Bank, North Sydney.

### FRIENDLY SOCIETY LODGE PRACTICE IN QUEENSLAND.

THE following notice is being addressed to the members of the Queensland Branch of the British Medical Association by the Council of the Branch:

In connexion with the introduction of the Federal Model Lodge Agreement into the metropolitan area, town members of the Queensland Branch have given three months' notice of termination of the old agreement to the friendly society lodges as from December 30, 1927, so that the new agreement will commence from April 1, 1928.

Before accepting positions as medical officers to friendly society lodges in the Brisbane metropolitan area members of the British Medical Association are requested to communicate with the Honorary Secretary of the Queensland Branch, Dr. E. S. Meyers, B.M.A. Building, 35, Adelaide Street, Brisbane.

### Medical Societies.

#### THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING OF THE MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA was held at the University of Adelaide on October 7, 1927.

#### Situs Inversus Viscerum.

PROFESSOR H. H. WOOLLARD read a paper entitled: "Some Remarks on *Situs Inversus Viscerum*" (see page 100).

PROFESSOR HARVEY JOHNSTON opened the discussion by pointing out that the mesoderm grows from the same part of the blastopore as that manipulated by Spemann. Professor T. Brailsford Robertson asked if the work of Spemann bore any relation to the axial gradient of Child. Professor Woollard replied that Child himself had said that it did not.

Professor T. H. Johnston referred to the armadillo and asked if the four embryos arising from one ovum showed any signs of reversal of symmetry. He also gave a demonstration of the four armadillo embryos.

Dr. B. H. SWIFT asked if the work detailed had any bearing on their knowledge of dermoid cysts of the ovary.

#### Treatment of Pernicious Anæmia.

Dr. C. T. C. DE CRESPIGNY read a communication on the recent treatment (Minot and Murphy) of pernicious anæmia by the use of liver feeding as based upon the experiments of Whipple. Whipple ascribed the action to nuclein. The cases cited included one of one and a half years' duration with a hæmoglobin percentage of 32; the treatment consisted in giving hydrochloric acid and 132 grammes of sheep's liver a day. After two and a half months the hæmoglobin percentage had risen to 80 and other improvements, especially in symptoms arising from involvement of the spinal cord, had been manifested. Two other patients had also been treated with like success. Dr. de Crespiigny ascribed the action to the reticulo-endothelial tissue.

Dr. L. V. BULL stated that he had never before seen such changes in the blood picture of pernicious anæmia as in persons treated by this method. They showed after treatment absolutely no evidence of pernicious anæmia. He also referred to the work of Conn and others who had obtained aqueous concentrates from liver tissue containing no lecithin or protein, which were stated to produce the same effects as the liver feeding.

#### Mammary Gland.

Mr. H. R. MARSTON demonstrated the mammary gland of a lactating echidna. The histological structure of the gland was identical with that of ordinary mammary gland and was in no way related to the structure of sebaceous

gland; with the differentiation of mammary gland lactose appeared; it was not present in sebaceous secretion. He stated also that the islet tissue of the pancreas was separated from the secretory tissues.

Professor Johnston said that in lower animals the islet tissue was definitely localized as separate tissue. Professor Woollard held that there was some similar division in man in whom it was present largely in one portion of the gland.

#### THE ALFRED HOSPITAL CLINICAL SOCIETY.

A MEETING OF THE ALFRED HOSPITAL CLINICAL SOCIETY was held at the Hospital on November 29, 1927. The following patients were presented.

##### Familial Goitre.

MR. A. J. TRINCA showed two patients with familial goitre. The first was a young man, *etatis* twenty-two, with a large thyroid gland, irregular in shape and consistency and containing adenomata in the right lobe. He had a low basal metabolic rate. He was of the cretin type, with defective physical development, but no definite mental deficiency. At the age of eight he had been given thyroid treatment, but as he had gone to the country to live he had had no further thyroid therapy.

The second patient was a girl, *etatis* sixteen, with a large thyroid containing adenoma in the isthmus. She had been backward, dull and depressed until three years of age. She had been given thyroid treatment since the age of two; relapses had occurred whenever the medication was discontinued. Menstruation had commenced a few months previously and had been very profuse.

Her father had died at the age of forty-one. He had had a goitre. Two or three cousins on the father's side had goitre and of the other cousins one had a mental disturbance and another was bedridden through congenital deformities.

DR. HENRY LAURIE said that he had been attending the girl for a number of years and had been treating her with thyroid. He stated that the father's brother lived in America and had four or five children; when shown a photograph of these children the mother had noticed how strikingly they all resembled her own son who had a definite cretinoid *facies*.

DR. C. E. DENNIS suggested that if the boy's epiphyses were still ununited, thyroid treatment might give rise to an improvement in his physical development.

DR. M. D. SILBERBERG suggested that as the glands were adenomatous, treatment with iodine might cause them to hyperfunction with possible improvement of the patient's condition, but the danger would be that hyperfunction once started might be difficult to control.

##### Polycythæmia.

DR. M. D. SILBERBERG presented two patients suffering from polycythæmia. The first was a male, aged sixty-three years, who complained of pain in the lower part of his back and chest for the past six months. He had had a severe nasal hæmorrhage three months before. His face was suffused, of a dark cherry colour, with dilated venules. His arteries were very thickened and tortuous. His systolic blood pressure was 208 millimetres and his diastolic pressure was 100 millimetres of mercury. The apex beat of his heart was 11.5 centimetres from the middle line. The second aortic sound was clear. Nothing abnormal was detected in the lungs or abdomen. The urine contained albumin. The blood serum did not react to the Wassermann test. The fundi contained very dilated and full veins. The conjunctivæ were very injected. A blood examination had been carried out. There were 7,900,000 red blood corpuscles per cubic millimetre and 140% hæmoglobin.

The second patient was a male, aged fifty-five years, a country worker. He had complained of pain in the left side of the chest and upper part of the abdomen for six

months. He had had a bluish coloured face for many years, but this was getting worse.

There was a dusky, cherry coloured cyanosis with dilated venules on his face and nose and his conjunctivæ were injected. His fundi contained very dilated, full veins; the arteries were thickened and tortuous. His systolic blood pressure was 170 millimetres and his diastolic blood pressure was 110 millimetres of mercury. His heart sounds were clear. Examination of his lungs revealed a diminished vesicular murmur, dullness and diminished vocal fremitus and vocal resonance at the base of the left lung. Some adhesions and pleural thickening were detected by X ray examination. The urine contained a small amount of albumin. Blood examination revealed 10,000,000 red blood cells and 10,000 leucocytes per cubic millimetre. The colour index was 0.8. The differential count disclosed 88% polymorpho-nuclear cells, 3% basophile cells, 6% small lymphocytes and 3% large mononuclear cells.

DR. J. F. MACKEDDIE drew attention to the existence also of hypotensive types and the equal liability of persons with this type to vascular complications in the central nervous system. He referred to a patient admitted to hospital with the complete picture of uræmic coma, of which a correct diagnosis had been made through a purely routine blood count.

DR. M. D. SILBERBERG alluded to the destruction of blood cells, especially the red, by phenylhydrazine hydrochloride and proposed administering small doses to these patients.

##### Chronic Gout.

DR. J. F. CHAMBERS showed a patient with chronic gout. He was a male, aged fifty-nine years, whose father had suffered from articular gout, and whose own trouble had commenced in the classical manner with an acute attack in the first right metatarso-phalangeal joint thirty years previously. His systolic blood pressure was 210 millimetres and his diastolic blood pressure was 115 millimetres of mercury, with moderate cardiac enlargement. The patient was a tailor by trade and as not one of the ten digits had escaped extensive infiltration with sodium biurate, mechanical disability rather than pain had forced him to abandon his occupation. Quantities of colchicum had been taken daily on alternate weeks and had appeared to render the fingers a little freer.

DR. J. R. BELL suggested mechanical removal of the gouty deposit.

DR. F. KINGSLEY NORRIS, to exemplify the suddenness of onset in acute articular gout, cited a case in which the first symptom was a sharp pricking pain in the under surface of the first metatarso-phalangeal joint that had led to a search for a foreign body as the causative factor.

##### Pyknopsy.

DR. KINGSLEY NORRIS's patient was probably suffering from pyknopsy. He was a male, aged twelve years. He had had seizures since he was ten years of age; they had occurred as often as every quarter of an hour throughout the day. The fits had usually been accompanied by unconsciousness and voiding of urine; they had lasted from a few seconds to three minutes. The attacks were characterized by a throwing back of the head or a movement to either side, a turning up of the eyes, twitching or spasmodic clinching and relaxing of the hands and twitching of the eyebrows. These signs had been at times unilateral on one or other side. The serum did not yield a reaction to the Wassermann test.

DR. J. P. MAJOR did not think that this patient's condition conformed to all the requirements for a diagnosis of pyknopsy; complete lack of response to treatment was an essential.

DR. SPALDING LAURIE spoke of cases with similar clinical features of psychical origin which could be cured by suggestion. These he was prepared to include under the designation of pyknopsy.

DR. J. F. MACKEDDIE drew attention to the duration of the seizures in the case under discussion and to the occurrence of definite motor phenomena. He was not disposed to view the condition with the same hopeful prognosis as typical pyknopsy.



## Public Health.

### HEALTH WORK IN ENGLAND AND WALES.

THE eighth annual report of the Ministry of Health for the year ended March 31, 1927, is a substantial volume of over three hundred pages. Its importance and interest is even greater than usual, since a summary of the organization and development of the work of the Ministry since its inception, a period of eight years, has been included. It is obviously impossible to handle the contents of this report in an adequate manner within the space at our disposal. An attempt will therefore be made to summarize some of the information that has special interest to hygienists outside England.

#### International Problems.

Reference has been made from time to time in these pages to the effect of the Covenant of the League of Nations on the health problems that have international concern. The Health Organization is collecting information concerning the prevalence of epidemic disease and taking steps to prevent its spread, partly through a new centre in Singapore. Its influence together with the co-ordinated effort of the health authorities in various countries should have the effect of reducing the introduction of epidemic diseases into countries like Australia. In the early part of 1926 an international sanitary conference was held in Paris at which no less than seventy countries were represented. All the plenipotentiaries present on June 21, 1926, signed the protocol, subject to certain reservations. The measures adopted aim at the control from an international point of view of cholera, plague, yellow fever, small pox and typhus. Several other useful actions were taken by the Convention and it is anticipated that a closer cooperation and a better understanding between the several countries of the world in regard to health matters will result.

#### The British Ministry of Health.

Prior to 1919 the central administration of the public health laws and regulations was vested in the Local Government Board, a board in name only. The President of this board was required to carry out the functions of his department with restricted legislative powers. The scheme on which the control of the public health was based, was so faulty that scarcely anyone concerned with hygiene was prepared to advocate its retention. It was therefore a material advance when the Ministry was formed and an attempt was made to consolidate the laws relating to public health. The functions of the local authorities were not altered when the central authority was changed. It is stated in the report that these functions are discharged in a regular and efficient manner and that unless the foundations of adequate local government had remained firm during the post-war years, the Ministry could not have become properly organized and developed. We venture to suggest that while some of the local authorities may perform their duties to the public in an admirable manner, the majority fall short of the ideal. The new Ministry not only took over the sanitary control from the Local Government Board, but also undertook the duties of other departments in regard to midwives, the health of mothers and children, infant life protection and the medical inspection and treatment of school children and young persons. Moreover, the functions of the National Health Insurance Commissioners were ceded to the Ministry. Closely connected with the work of insurance is that of the Poor Law, a department whose administration has become increasingly difficult on account of the enormous increase in unemployment. It is pointed out in the report that many of the local authorities have not exercised discretion in regard to allowances granted to able-bodied persons. The fact that no less than £49,500,000 were expended on outdoor and indoor relief, the maintenance of the insane in hospitals for the insane (in the report the expression "lunatics in asylums" is still used) and expenses incidental to these services is evidence of the difficulty of the problem. The Ministry has also some

controlling powers over voluntary hospitals. It will thus be seen that the British Ministry of Health has extremely wide powers, an extensive sphere of action and almost immeasurable responsibilities. The history of the eight years of its existence may be accepted as evidence of the excellence of its organization and the competence of its administration and leaders. It is significant that the wide powers are exercised with judicious caution and circumspection and that its aim is to improve the health of the community rather than to demonstrate its autocratic strength.

#### Insanity and Mental Deficiency.

A great deal of statistical information concerning the incidence and extent of insanity and mental deficiency has been collected within the year covered by the report. A Royal Commission has been examining the whole of this important question and this commission issued its report in July, 1926. The report contains recommendations concerning a new code for the treatment of insanity and mental disorder and a reorganization of the board of control. Fresh legislation is to be introduced in regard to mental defectives. An important amendment is the inclusion under the term of defectives whose mental state has developed subsequent to birth or at an early stage. It is recognized that the mental state of some persons after recovery from *encephalitis lethargica* may be indistinguishable from that of ordinary congenital mental defectives.

#### Nurses' Registration.

In the year 1919 the *Nurses Registration Act* became law. On March 31, 1927, there were 57,313 nurses on the register, including 5,118 placed on the register since June 30, 1925, by examination and 123 placed on the register under the rules of the General Nursing Council for England and Wales in connexion with reciprocity. Prior to 1919 the training of nurses was left to the discretion of the authorities in the individual hospitals. In consequence the value of the certificates granted to nurses varied with the efficiency of the training school at which the certificates were issued. It is obvious that neither the Ministry nor the General Nursing Council can be concerned with the individuals whose names have been placed on the register. For a series of years the untrained woman who practised as a nurse before the act was introduced, must have the right to continue her calling, provided that no one substantiates a charge of inefficiency or improper conduct. The discriminating ability of the public had reduced the numbers of the ignorant and dangerous women of the Sairey Gamp type long before the advent of statutory registration. It must also be admitted that some of the untrained women were intelligent and reliable nurses, ready to learn, obedient to orders and yet endowed with sufficient knowledge and self-reliance to be able to act safely in emergency. Others have had the spirit of superiority and the daring of persons with little knowledge, while others again have functioned merely as helps, without ordinary intelligence or initiative. Despite this varying admixture, the nurses of England have proved themselves to be a highly efficient and competent body.

#### Dental Practice.

A highly important innovation in the campaign aiming at the improvement of the public health is the amendment of the *Dental Act* of 1921. This measure prohibits the practice of unqualified persons. As in the case of the nurses, those persons who were in dental practice at the time of the introduction of the amending act, have been admitted to the register. In the course of time the Dental Board will be able to eliminate the advertising tradesman who employs unqualified and often untrained assistants and who relies on the credulity of the public and on the attraction of coloured electric signs. It is highly satisfactory to learn that the Dental Board is accumulating substantial sums of money out of the annual registration fees which are to be spent as grants for research.

#### Housing, Town-Planning and Sanitation.

The war arrested building operations throughout the whole of Europe and led to an acute shortage of dwellings in England as well as elsewhere. The shortage has been

rendered still more serious, since the control of insanitary houses has become more stringent. Obsolete by-laws have been replaced by modern regulations and a higher standard for all tenements and houses has been introduced. The housing problem in Europe is a very different one from that of Australian cities. Some idea of the magnitude of the task can be gathered from the figures given. Subsidies amounting to nearly fifty-four million pounds sterling have been paid out of consolidated revenue since the end of the war for housing purposes. Since 1919 the liability of the local authorities has been limited to a sum not to exceed that produced by a penny rate for this purpose. The State assisted in the building of over half a million houses during the eight years under review.

Town planning schemes are now enforced in all urban areas with a population of over 20,000. Real progress has been recorded in this connexion and within a relatively short time a demonstration will be given of what can be achieved even in a country that has been inhabited for many centuries.

No new principles have been introduced into the work of the so-called sanitary administration. Some useful information has been gathered and collated concerning the water supplies in various parts of the country. Private or semi-private companies or even one or more individuals may act as undertakers and apply for provisional orders empowering them to construct waterworks. The consent of the local authority is required and when there is an independent road authority, its consent is also required. The Minister has power to dispense with the consent of the road board if he finds that the work should be carried out. It is stated that treatment by chlorination and in some instances subsequent dechlorination by ammonia has sufficed to render the water in the metropolitan area satisfactory. Large sums of money are continually being spent on the laying down of sewerage schemes. As each new township is brought into existence, sewerage schemes are prepared and little time is wasted in the work of adapting the scheme to the peculiarity of the local conditions of soil and subsoil. The fact that in each of the Australian capital cities several of the suburban areas are still without a sewerage system in operation, despite the large populations and the rapid development, does not compare well with the story of sewerage in Great Britain.

The subjects of pollution of rivers, the disposal of trade effluents, public cleaning, smoke abatement, the maintenance and extension of public parks, pleasure grounds and playing fields and the maintenance of canals are dealt with in detail. Each chapter contains information of intense interest to the hygienist.

#### Milk and Food.

The Ministry in England and Wales is eminently sane in its attitude toward the question of the milk supply and the regulation of the food traffic. No attempt is made to set up useless and harmful standards that have no connexion with the maintenance of health. The British Ministry apparently is not fond of red tape and a display of bureaucracy. The new orders relating to milk and dairies are strict enough to eliminate harm arising from unclean, adulterated or impure milk. They are elastic enough to insure that the control is effective without being harassing. They are definite enough to guide the public to distinguish between the good and the bad. All persons carrying on the trade of dairymen and all dairies have to be licensed and all importers of milk hold licences. Milk is graded as follows: Certified milk; grade A (tuberculin tested) milk; grade A milk; pasteurized milk. Licences are revoked if the prescribed bacterial standard is not maintained.

New regulations have been introduced in regard to the use of preservatives. The prohibition is not absolute. Glycerine is removed from the definition of preservatives; certain quantities of sulphur dioxide are permitted under well defined conditions. From cover to cover there is no reference to any attempt to restrict the sale of foods that may be given to infants, nor is any formula set up purporting to be the composition of human milk.

#### Infective Diseases.

The story of the notifiable diseases is a sad one. Unfortunately it reflects a partial failure of modern preventive

medicine. It is disturbing to read that the number of civilians attacked by diphtheria in 1923 was 40,009 and in 1926 51,069. It has been demonstrated that diphtheria can be prevented. The susceptible members of the community can be recognized and a temporary immunity can be established in the presence of an outbreak. In 1923 no less than 2,722 persons died of this disease and in 1926 the number was 2,994. If diphtheria is treated with antitoxin on the first day, death can be prevented. The control of puerperal infections is probably a more difficult matter, since they are acquired in many instances in a clandestine manner. The record of 2,611 septic infections and 1,109 deaths from these infections is disquieting. Again the control of enteric fever should be within the power of the modern hygienist. The causal organism is known; the source of infection can be traced without difficulty; the control of known sources of infection means the prevention of the spread of the disease. In the four years, 1923 to 1926 inclusive, the incidence of the disease varied between 2,739 and 4,121 and the deaths varied between 367 and 496. Scarlet fever in England is terribly common, between 80,000 and 90,000 children being attacked each year. The loss of life, young life, from this one disease is much too high. In 1923 no less than 993 died of it; in 1926 the deaths numbered 677. Scarlet fever is supposed to be a disease that can be prevented by the prompt and effective isolation of each source of infection. Pneumonia kills a very large number of persons each year and the pulmonary complications of influenza are also a frequent cause of death. Unfortunately the prevention of both acute lobar pneumonia and of influenza is not within the reach of the hygienist. Vaccination seems to be of little or no value and the other measures that have been suggested, have proved to be vain. Pertussis, morbilli and diarrhoea and enteritis are highly fatal diseases. While the death rate per thousand of population in the majority of the notifiable diseases have been reduced in the course of fifty years, the rate of reduction is slow and may be largely due to variations in the virulence of the causal organism or variations in the resistance of the community. Possibly the greatest hygienic blot in the record for the year ended March 31, 1926, is that connected with variola. Jenner was an Englishman; Jenner showed the way and even after a hundred and thirty years his countrymen refuse to listen to reason. In 1924 there were in England and Wales 3,797 persons stricken with small pox; in 1925 the number of infected persons was 5,254; in 1926 no less than 10,141 were attacked. No vaccinated person under thirteen years of age contracted the disease and of those over that age not one was infected within eight years of successful vaccination. In England and Wales vaccination is carried out in persons corresponding to less than 50% of the total births. The exemptions granted to "conscientious objectors," by which is meant persons who are careless of the safety of themselves and others or persons who are so stupid that they cannot recognize the truth, equivalent to between 37% and 45% of the total births. It is a sorry advertisement of the lack of common sense of the people.

While diphtheria, enteric fever, variola and other diseases have been flourishing despite our vaunted progress in hygiene, much has been achieved in regard to tuberculosis. An active campaign against this scourge has now been in existence for many years. On March 31, 1927, there were 367 tuberculosis officers in England, employed by the local authorities, 442 tuberculosis dispensaries and 69 special clinics for tuberculosis in general hospitals. The total number of beds for persons suffering from tuberculosis was 22,202. It is unnecessary in this place to give details concerning the various tuberculosis schemes in existence. The amount of money expended in the campaign is considerable, but it is not too large. In the report mention is made of Spahlinger's treatment. Caution is exercised in the non-committal statement. We have expressed the opinion that the claims made cannot be substantiated. Mention is also made of a method of treatment devised by an Australia practitioner. No beneficial results could be noted and it was believed that the treatment caused actual harm. It is held to be too early to form an opinion in regard to Calmette's method of inoculation against the disease.

Since 1915 the deaths from pulmonary tuberculosis have decreased from 40,803 to 30,108 in 1926. The fall has been steady. The fall in the deaths from other forms of tuberculosis has been even more remarkable. In 1915 13,492 deaths were ascribed to non-pulmonary tuberculosis; in 1926 the number was 7,417. Expressed as rates per thousand of population there was a fall in all forms of tuberculosis in twelve years from 153 to 96, in pulmonary tuberculosis the fall was from 115 to 77 and in non-pulmonary tuberculosis it was from 38 to 19.

Treatment centres for persons suffering from venereal diseases seem to be diminishing in number. Five centres have been closed between April 1, 1926, and April 2, 1927. The number still open was 179. Experience has shown that the most efficient and economical results are obtained in centres or clinics at which continuous out-patient attendance is given. There was a remarkable increase in the number of attendances at the centres during the year 1926. No less than 69,678 persons attended for the first time. Of these 21,165 were found not to be suffering from venereal disease. Of the remainder 11,214 males and 6,700 females were suffering from syphilis, 23,788 males and 5,889 females were suffering from gonorrhoea and 905 males and seventeen females were suffering from soft chancre. The total number of attendances was 1,904,063. The number of persons who withdrew from treatment before a cure was noted, was about 29,000 out of a total of 45,346. It appears, however, that the percentage of patients remaining under treatment until discharged by those in charge of the centres is increasing. Whether or not the incidence of the venereal diseases is decreasing as a result of the measures adopted, cannot be ascertained from the figures given.

#### CANCER RESEARCH.

THE HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS has issued a report on the work conducted by the Cancer Commission during the five years from 1923 to 1927.

The Health Committee in 1923 decided that from the international point of view it might be advantageous to inquire into the official figures of mortality from cancer as a whole and particularly from cancer of certain sites of the body which have been furnished over a long series of years in certain European countries. England and Wales, Italy and Holland were taken as specially suited for these comparisons, but auxiliary and confirmatory data from Switzerland and other nations in Europe and for some purposes from America also were subjected to analysis. The investigation was made by a commission of members of the Health Committee, with the assistance of statistical, clinical and other experts as well as of the Secretariat of the Health Section of the League. Its results promise to be of value both directly and indirectly. They relate chiefly to cancer of two sites, the breast and uterus, which were chosen because malignant growths of these organs is less likely than cancer of other sites to pass undetected or to be inaccurately reported as the cause of death. The Commission find that even when they have limited their consideration to these sites and deal solely with countries for which over a long period of years the national system of certification of causes of death has been well established and in many ways perfected, sources of error exist which seriously affect the proper comparison of the death rates as between one country and another and even as between one part of the same country and another part. Much valuable knowledge can and should be obtained by the comparisons of cancer death rates, but the Commission has found that in every one of the countries of inquiry the certification of causes of death in relation to cancer is more or less unsatisfactory. There is, in particular, great uncertainty regarding the observance of the rule that cancer deaths should be referred in statistical statements to the primary site and not to that of secondary growths to which the final fatal result has ultimately been due. There is in the Commission's opinion urgent need for investigation in all countries possessing an organized service of statistics of causes of death to determine exactly the degree to which certification by causes is unsatisfactory and how its scientific value may be improved.

The Commission with the aid of a distinguished anthropologist, Dr. E. Pittard, and an eminent statistician, Dr. Niceforo, made an effort to determine whether there was a relation in Europe between cancer mortality and race as judged by anthropometric characters. As a result of this inquiry a valuable monograph on the known facts regarding anthropological characters of different regions has been issued, but the anthropometric data even more than the mortality data proved to be too defective and the Commission has been compelled to admit that its efforts have revealed how much must yet be done before attempts to appraise racial elements in the prevalence of disease can be successfully undertaken. When consideration is given to the claims which have been made for individual nations and races that they are specially prone to or specially exempt from liability to cancer, this reasoned judgement, though negative in character, is not without practical value.

The direct results of the inquiry, however, have been by no means all of a negative kind. In each of the countries concerned national expert work was undertaken to ascertain the circumstances in which so many deaths from cancer, presumably preventable in large measure by early diagnosis and by early surgical (or radiological) intervention, were occurring. Special observations were made of sample series of tumours of the breast and uterus at particular hospitals and in selected areas, as well as of the massed figures for the country as a whole. The results cannot fail to give a very considerable impulse and encouragement to the efforts which are being made in many quarters to organize a system of medical and hospital service and of popular instruction which may prevent a large loss of life and the occurrence of a still larger amount of avoidable individual suffering. In a matter of this kind a wide survey obtained by putting together or contrasting the experience of several countries, differing in the type of their medical services, in their hospital facilities and in the outlook of their people towards medical and surgical science, is invaluable. The conclusion is reached by the Commission that when all these national differences are allowed for, it can be demonstrated that early operation is a far more successful measure than even the general body of the profession suppose and that the frequency of resort to operation remains "deplorably low." This opinion in one form or another has often been expressed before. The Commission claims that on account of the nature and extent of its recent investigation it is entitled to be regarded as an authority. The members of the Commission wish to remind the medical profession that while it is waiting for new knowledge on the ultimate causation of cancer or for specific remedies which may lead to the cure of cancer, a sphere of immediate practicable action is offered which in respect of these sites of cancer at least, is held to be capable of reducing death and suffering from cancer to a far lower level than at present obtains. From the point of view of education, the Commission's researches into the natural duration of untreated cancer and into various antecedent conditions connected with cancer at these sites furnish useful additions to medical knowledge. In regard to the influence of fertility it has been shown from the experience of all the countries that a fertility below the normal for the particular nation is associated with increased liability to cancer of the breast, while cancer of the uterus is to be associated not so much with fertility itself or with the number of pregnancies as with the occurrence of a first pregnancy. The Commission lays stress on the evidence that cancer of the cervix is connected with conditions of labour, particularly in *primiparæ*, which are in some measure preventable by the efficient management of the labour.

Indirectly the investigations of the Commission have been found valuable in each country in which they were pursued by helping to open up a comparatively new line of cancer research called team work. The questions at issue have required that clinicians, surgeons, health administrators and statisticians should be brought together for consultation and to arrange for the suitable selection of cases, the determination of after-histories of patients submitted to operation and the assessment of results. This cooperation has in some cases been central and related



to the country as a whole; in other cases it has been local in connexion with a particular communal area or a particular hospital. But in every case it has been fruitful and the Commission urges that the organization of group studies of this kind should be extended to other countries and applied to all sites and varieties of malignant disease. On the completion of its investigations dealt with in the report, the Commission has undertaken the further duty of collecting and analysing for the consideration of the Health Committee of the League different suggestions for applying the special opportunities of international scientific collaboration which the Health Organization at Geneva can furnish to the elucidation of other specified purposes of cancer research or for the prevention of cancer mortality. That the Health Organization of the League should compete with or overlap the mass of cancer investigation, national and international, already proceeding in every civilized country of the world would be an indefensible proposition, but the inquiries summarized in the report demonstrate that by the wise selection of appropriate matters for international inquiry the cancer studies made in individual countries or by individual investigators can be materially helped by this organization.

## Correspondence.

### THE COLLEGE OF SURGEONS OF AUSTRALASIA.

SIR: I have read with interest Dr. Corlette's letters on the examination system of the English College of Surgeons. His remarks on the type of men who might get in or who might be kept out can be supported by experience. Dr. Corlette mentions Watson Cheyne as one who had considerable difficulty in passing his first Fellowship examination and Hugh Owen Thomas as one who probably could never have passed the test.

Let me add Sir William Macewen's name to the list of failures at the test. He went up for the examination when he had already won fame for his original and valuable work on brain surgery and bone surgery. He was rejected. The examiner who rejected him was Mr. Carless. Professor Macewen used to tell this to his students, of whom I was one. By the way, Macewen never called himself "Mr." like the London surgeons.

I believe I am right in adding the name of another famous man to the list of rejected ones. That was James Mackenzie, afterwards Sir James Mackenzie, whose work on the heart has ranked him with the greatest names in the history of medicine. What might not Sir James Mackenzie have done for surgery if he had not been blocked from a surgical career by the Royal College of Surgeons' system?

Yours, etc.,

F. GORDON ROBERTSON.

Birriga Road, Woollahra.

December 21, 1927.

### INJECTION TREATMENT OF VARICOSE VEINS.

SIR: In reference to a comment in THE MEDICAL JOURNAL OF AUSTRALIA on the treatment of varicose veins, I have done a lot of these injections (nearly 3,000) and I have found the quinine and salicylate about equally satisfactory. As regards the thrombosis, there does not seem to be the least risk of embolism. The clot which forms is a curative reaction covering the affected area, to which it is intimately adherent and from which being aseptic it has no tendency to spread. It is the same process as occurs in a ligatured vessel. I have seen no emboli nor have I seen any case reported.

Yours, etc.,

L. CRIVELLI.

South Melbourne.

December 1, 1927.

### THE TREATMENT OF PERNICIOUS ANÆMIA.

SIR: In connexion with Dr. Leslie Dunlop's article on liver feeding published in this journal on December 17, 1927, the following incident may be of interest. When in Melbourne in August last I had the pleasure and privilege of attending the lectures given by Professor Elliott and Dr. Kanavel. Dr. Elliott's lectures and lantern demonstrations of the effects of liver feeding in pernicious anæmia were most impressive. Soon afterwards I heard that a relative of mine living in England was seriously ill with pernicious anæmia and had been so for some months. As she was living in a remote country village I thought it was very probable that liver feeding had not been tried or even not heard of perhaps. I therefore sent a cablegram suggesting feeding with six ounces of liver daily. I have recently received a letter stating that the patient was improving rapidly and was then able to get out of bed and walk a little and that she was continuing the liver feeding. I regret I can give no details as to the blood picture and, of course, it remains to be seen whether the improvement will continue, but I feel that my prescription by cable was probably justified.

Yours, etc.,

PERCIVAL PICKERILL.

Harley, 143, Macquarie Street, Sydney.

December 24, 1927.

### FEES FOR ATTENDANCE ON INJURED WORKERS.

SIR: Would you be kind enough to bring before the notice of the medical profession in this State certain matters which are of considerable importance in connexion with the *Workers' Compensation Act*?

Most of us are aware, I think, of the chief factors regarding the practical working of this act, but I am sure many have experienced considerable difficulty in obtaining adequate remuneration for services rendered. We realize that legally we must look to the patient for recovery of fees, unless some arrangement is made with the insurance company involved. In order to avoid certain difficulties regarding the payment of fees and at the same time to more or less standardize them, the Council of the British Medical Association<sup>1</sup> in consultation with various insurance companies drew up a schedule "D," copies of which members of the British Medical Association received.

In this schedule are set forth various fees for particular services rendered and the insurance companies concerned have notified their intention of paying the fees incurred directly to the medical attendant. This no doubt saves the medical attendant a certain amount of trouble and guarantees the fees. The medical attendant on his part, if he is willing to work under this scheme, is prepared to reduce his fees somewhat and schedule "D" is regarded as an equitable arrangement and the best solution of many problems connected with the act.

At the same time it must be clearly understood that it is not binding on any medical attendant and consultants and members practising a specialty cannot be expected to treat compensation cases according to the rates set down in schedule "D," *exempli gratia* (i) consultations at surgery seven shillings and sixpence, (ii) removal of foreign body from the cornea including after treatment one guinea. In dealing with the latter complications may arise, corneal ulceration may occur, leading to some permanent loss of vision and obviously the payment is inadequate here for services rendered.

The British Medical Association has made it fairly clear that schedule "D" was framed for medical attendants of injured workers. It was not anticipated or expected that consultants would accept the fees as set down in the schedule. Nevertheless some of the insurance companies consider this schedule is binding on all members of the British Medical Association.

<sup>1</sup> New South Wales.

<sup>2</sup> Dr. Allen presumably refers to the Council of the New South Wales Branch of the British Medical Association. Throughout the letter there is confusion between the British Medical Association and the New South Wales Branch of the Association.

I have had several instances of this in my work in Newcastle. Patients have been sent to me by the employer requesting treatment and stating they would notify the insurance company of their action and also patients have been sent direct by the insurance company for treatment. When an account was rendered to the insurance company for treatment, a reply was received pointing out the fees were not in accordance with schedule "D" and they refused to pay except on the basis of seven shillings and sixpence per consultation.

I think it is essential some publicity should be given in our journal to this phase of the *Compensation Act*.

Although much credit is due to the Council for the work done in connexion with the schedule, it should be clearly pointed out to the insurance companies that it does not and cannot apply to all members of the medical profession.

There are few consultants, I imagine, who wish to fill their rooms with compensation cases paying seven shillings and sixpence per visit and yet there are insurance companies who would endeavour to make no distinction between consultants and general practitioners, but make schedule "D" binding to all.

Yours, etc.,

HUGH G. ALLEN.

President of the Central Northern  
Medical Association.

Newcastle, New South Wales.

January 5, 1928.

#### THE INSIGNIA OF ÆSCULAPIUS.

SIR: While crossing Sydney Harbour on a vehicle ferry an artisan who had been looking at my traffic badge approached me with the question: "What's the idea of the snake?" I explained its significance and that it was derived from the insignia of the Greek god Æsculapius. He then asked why we could not have taken some English symbol and in reply I mentioned that practically all universally acknowledged symbols are of ancient origin and that the medical profession is proud of its connexion with the ancients, especially in regard to the legendary powers of Æsculapius and the Oath of Hippocrates.

In view of the likelihood of others being placed in a similar position, I thought the following might be of interest.

According to Smith's "Classical Dictionary" Æsculapius in Homer was not a divinity, but "the blameless physician" and the serpent was a symbol of renovation. The Greeks also believed that serpents had the power of discovering healing herbs. In all probability, moreover, it was known to the Greeks that in the mythology of Ancient Egypt the cobra (*uraeus*) was a symbol of royalty and the asp was part of the insignia of certain harvest divinities. In Hindu mythology the serpent was symbolical of wisdom and when shown with its tail in its mouth, it represents eternity because it forms a circle, which has no beginning and no end.

To the man in the street, however, the "snake" of my interlocutor is an object of detestation, partly because of the venomous nature of many species and also on account of its part in the Mosaic allegory of "The Fall." Some authorities consider that the evil side was purely secondary and that the serpent was used in the allegory to tempt human beings to seek the knowledge of good and evil on account of its representing wisdom and understanding. In the New Testament it is definitely the symbol of wisdom: "Be ye therefore wise as serpents and harmless as doves" (St. Matthew, Chapter x, 16).

The staff with which the serpent is associated, is not to be confused with the *caduceus* of Hermes. The latter was originally a herald's baton, a straight piece of olive wood with gold ornaments and two white ribbons which afterwards became serpents. Since the medical profession is largely responsible for a good deal of scientific research, the association would be quite appropriate as Hermes was the patron deity of invention.

The remainder of the badge is full of symbolic interest. The cross is symbolical of that altruism which should have an important place in the moral make-up of every

practitioner of medicine, a Maltese cross being especially appropriate, as it was worn by members of the Order of St. John of Jerusalem before the Crusades and was adopted by the Knights of the Crusades as their badge and thus is a fitting symbol of the crusade which we are continually waging against pain, disease and death. The circle surrounding the whole is a symbol, as mentioned above, of eternity and also of the universality and continuity of the healing art.

The colours, too, have their meaning. White stands for the purity of life and conduct which the disciples of Hippocrates are expected to live up to. Green for the bounty of nature and the growth and development seen in the spring. Blue for the vault of heaven, its boundless extent and its freedom from blemish. And lastly gold stands for anything precious or of great value and what could be of greater value to human beings than the *mens sana in corpore sano* which the medical profession aims at providing for all?

Yours, etc.,

SAPIENTER SI SINCERE.

January 11, 1928.

#### Obituary.

HEWLETT BRETON.

It is with regret that we have to announce the death of Dr. Hewlett Breton, of Terang, Victoria, which occurred on January 16, 1928.

#### Proceedings of the Australian Medical Boards.

##### TASMANIA.

THE undermentioned have been registered under the provisions of *The Medical Act*, 1918, of Tasmania, as duly qualified medical practitioners:

O'Keeffe, Catherine Rose, M.B., B.C., B.A.O., 1925 (National University of Ireland), Fingal.

Freeman, William John, M.B., B.S., 1926 (Univ. Melbourne), Launceston.

##### QUEENSLAND.

THE undermentioned have been qualified under the provisions of *The Medical Act* of 1925, of Queensland, as duly qualified medical practitioners:

Armstrong, Allan Cameron, M.B., Ch.M., 1926 (Univ. Sydney), Camooweal.

Love, Harold Russell, M.B., B.S., 1926 (Univ. Melbourne), Brisbane.

Restoration to the Register:

McKillop, Martin Joseph, M.B., Ch.M., 1921 (Univ. Sydney), Brisbane.

##### NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of *The Medical Act*, 1912 and 1915, of New South Wales, as duly qualified medical practitioners.

Aitken, Archibald James, M.B., B.S., 1927 (Univ. Melbourne), Wagga.

Mackenzie, John Keigh Douglas, M.B., B.S., 1925 (Univ. Melbourne), Junee.

Peoples, Charles John, L.R.C.P., L.R.C.S. (Edinburgh), L.R.F.P.S. (Glasgow), 1927, c.o. Marlborough Hotel, King Street, Newtown.

Thom, Edith Marjorie, M.R.C.S. (England), 1918, L.R.C.P. (London), 1918, 139, Macquarie Street, Sydney.

For additional registration:  
Waterhouse, Arthur T. Stanley, Ch.M., 1927.

### Books Received.

**MEDICAL ASPECTS OF CONTRACEPTION**, being the Report of the Medical Committee appointed by the National Council of Public Morals in connection with investigation of the National Birth-rate Commission. Chairman: Charles Gibbs, F.R.C.S.; Vice-Chairman: Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P.; 1927. London: Martin Hopkinson and Company, Limited. Demy 8vo., pp. 193. Price: 10s. 6d. net.

**DIATHERMY: ITS PRODUCTION AND USES IN MEDICINE AND SURGERY**, by Elkin Cumberbatch, M.A., B.M. (Oxon.), D.M.R.E. (Camb.), M.R.C.P.; Second Edition; 1927. London: William Heinemann (Medical Books) Limited. Demy 8vo., pp. 345, with illustrations. Price: 21s. net.

### Diary for the Month.

FEB. 1.—Victorian Branch, B.M.A.: Branch.  
FEB. 3.—Queensland Branch, B.M.A.: Branch.  
FEB. 7.—Tasmanian Branch, B.M.A.: Council.  
FEB. 9.—Victorian Branch, B.M.A.: Council.  
FEB. 9.—Central Southern Medical Association, New South Wales.  
FEB. 10.—Queensland Branch, B.M.A.: Council.  
FEB. 14.—Tasmanian Branch, B.M.A.: Branch.  
FEB. 14.—New South Wales Branch, B.M.A.: Ethics Committee.  
FEB. 20.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
FEB. 21.—Tasmanian Branch, B.M.A.: Council.  
FEB. 21.—New South Wales Branch, B.M.A.: Executive and Finance Committee.

### Medical Appointments.

Dr. George Elliot Hobson (B.M.A.) has been appointed a Medical Officer, Office of the Director-General of Public Health and Assistant to the Chief Medical Referee, Workers' Compensation Commission, Department of Labour and Industry, Sydney.

Dr. Arthur Bradridge Phillips has been appointed Visiting Surgeon to Grafton Gaol, New South Wales.

Dr. G. F. Read has been appointed an Official Visitor of the Mental Diseases Hospital, New Norfolk, Tasmania.

Dr. William Roland Cavanagh-Mainwaring (B.M.A.) has been appointed Honorary Consulting Surgeon at the Adelaide Hospital, South Australia.

Dr. Samuel Powell Barnett has been appointed a Resident Medical Officer at the Adelaide Hospital, South Australia.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xx.

HOME AND TERRITORIES DEPARTMENT, CANBERRA: Medical Officer.

THE ADELAIDE CHILDREN'S HOSPITAL, INCORPORATED: Three Resident Medical Officers.

THE BRISBANE AND SOUTH COAST HOSPITALS BOARD: Medical Vacancies.

THE COAST HOSPITAL, LITTLE BAY, NEW SOUTH WALES: Honorary Physician.

THE QUEEN'S (MATERNITY) HOME, ROSE PARK, SOUTH AUSTRALIA: Resident House Surgeon.

### Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
QUEENSLAND: Hon- orary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	All Contract Practice Appointments in South Australia. Boomeroo Centre Medical Club.
SOUTH AUSTRALIAN: Secretary, 107, North Terrace, Adelaide.	All Contract Practice Appointments in Western Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	Friendly Society Lodges, Wellington, New Zealand.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	

Medical practitioners are requested not to apply for appointments to position at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

### Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £3 for Australia and £2 5s. abroad per annum payable in advance.